

CHAPTER 2

SMALL ARMS

LEARNING OBJECTIVES

Upon completing this chapter, you should be able to do the following:

1. Discuss the operation and maintenance of Navy small arms, and the special precautions associated with those small arms.
2. Describe the cycle of operation, disassembly, assembly, and safeties of Navy handguns, shoulder weapons, and machine guns.
3. Describe the operating cycle, safeties, and maintenance of the Remington M870 shotgun.
4. Discuss the Mk 87 Mod 1 line-throwing kit and describe what is needed in preparation for firing.
5. Describe the controls, safeties, and operation of the M79 grenade launcher.

SMALL ARMS FUNDAMENTALS

The term *small arm* means any firearm with a caliber (cal.) of .60 inch or smaller and all shotguns. Since there are no .60-cal. weapons in the Navy, all pistols, rifles, shotguns, and machine guns up through .50 cal. are small arms.

In this chapter we will review small arms nomenclature and operation, as well as how small arms operate in the automatic and semiautomatic modes. We will then describe the small arms currently used by the Navy—including hand guns, shoulder weapons, shotguns, and machine guns. We will conclude with brief discussions on small arms special precautions, maintenance, storage and issue requirements, and range duties.

As a Mineman on board mine countermeasures ships, you will be concerned with pistols, rifles, shotguns, and machine guns. Your responsibility in the field of small arms is twofold. First, you must know how to use and maintain them. Second, you must be able to train other personnel in their operation, safe handling, and maintenance.

Most small arms are procured from the Army and issued by the Navy to its field activities and the fleet. Information on basic operator maintenance is provided

on maintenance requirement cards (MRCs), but all other information (operation, troubleshooting, parts lists, and so on) is normally found in Army technical manuals (TMs) and field manuals (FMs). FMs and TMs list the spare parts, special tools, and organizational maintenance procedures for a particular weapon. The FM is the operator's manual, intended for personnel in the field who must maintain the weapon. OP 0 also lists TMs, FMs, and OPs that pertain to small arms.

SMALL ARMS NOMENCLATURE

Before we begin the study of the individual weapons, we need to examine some of the quirks in small arms nomenclature (names of the parts). Generally, terminology pertaining to the weapons themselves is fairly standard because the Navy has adopted most of the Army's system of identification. Minor differences do exist, however. For example, the Army's carbine M1A2 is known in the Navy as the carbine Mk 1 Mod 2. Notice that the Navy uses the abbreviations Mk (mark) and Mod (modification) as the equivalents of the Army's letter designations *M* and *A*.

The diameter of a shotgun's bore is referred to as the *gauge* of the shotgun. Gauge (with the exception of the .410 shotgun) is not a measurement of inches or millimeters. Instead, it is the number of lead balls of

that particular diameter required to make a pound. For example, if you measure the diameter of a 12-gauge shotgun's bore, you will find it to be 0.729 inch. If you were to make a number of lead balls of this diameter and weigh them, you would find that 12 of them make a pound.

So the larger the bore of a shotgun, the smaller the gauge number. A 16-gauge shotgun, for example, has a smaller bore than a 12-gauge.

CYCLES OF OPERATION

Every weapon has a cycle of operation. This cycle is a group of actions that takes place when a round is fired and that must occur before the next round can be fired. In the automatic small arms currently used by the Navy, the sequence of actions or the way they take place may vary between weapons of different design; however, they always occur.

There are eight steps in the cycle of operation, as shown in figure 2-1. We will briefly discuss each step.

Feeding

The feeding action places a round in the receiver just to the rear of the chamber. In its simplest form it amounts to putting a cartridge by hand in the path of the device that will chamber the round. Most often, feeding is done by a spring-loaded follower in a magazine. However, magazines have a limited capacity that

cannot sustain the continuous rate of fire required by machine guns. Therefore, machine gun ammunition is belted, and the rounds are fed to the rear of the chamber by cam and lever action.

Locking

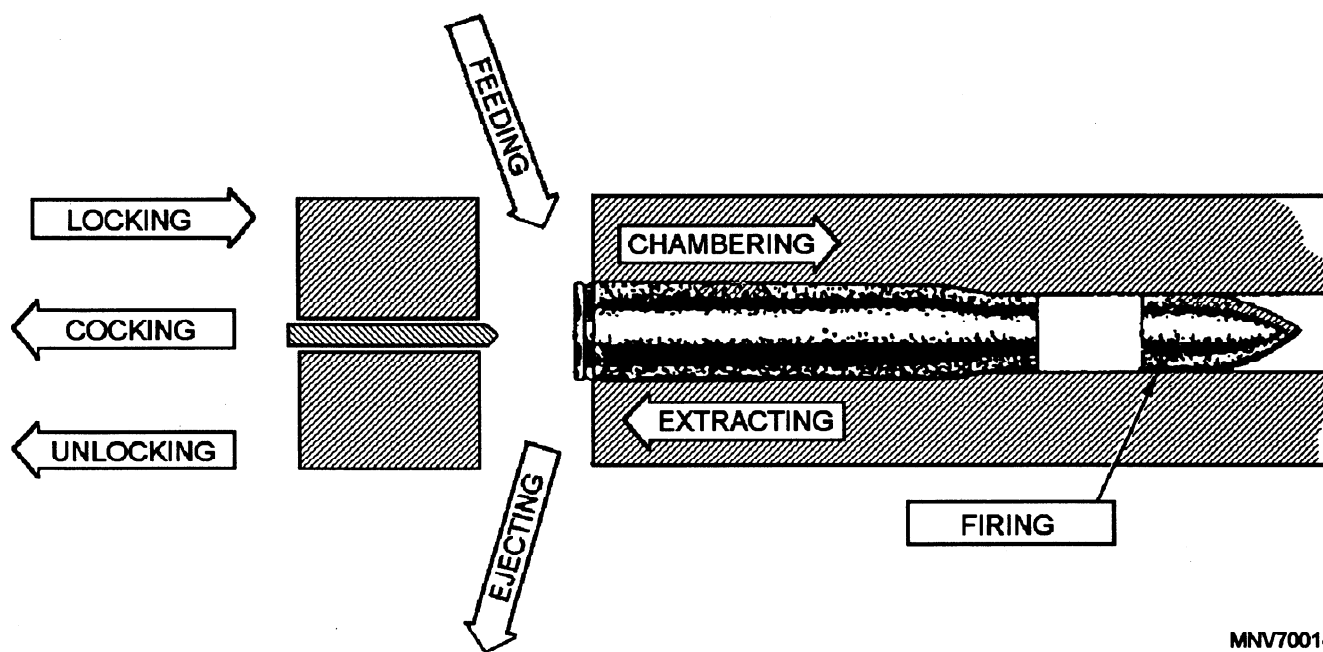
The locking action holds the bolt in its forward position for a short time (after firing) to prevent the loss of firing gas pressure until the bolt is unlocked by other forces. For low-power weapons, it is possible to seal the breech for a short time by merely increasing the weight of the bolt. The bolt starts to move as soon as the weapon fires. But if the bolt is sufficiently heavy, it will not move far enough to release the gases until their pressure has been satisfactorily reduced. This method is used by submachine guns and other straight blowback-operated small arms such as .22-cal. rimfire autoloading pistols.

Firing

The firing action occurs when the firing pin strikes the primer of the cartridge.

Unlocking

Unlocking occurs after the firing of the round. Actions for unlocking are just the reverse of those required for locking. For most rifles, the first movement of the bolt is a rotating movement that disengages the locking lugs.



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Figure 2-1.—The small arms cycle of operation.

Extracting

The extracting action pulls the empty case out of the chamber. The extractor (normally a small hooked piece of metal encased in the bolt) snaps over the rim of the cartridge case when the round is chambered. As the bolt moves rearward after firing, the extractor hauls out the empty brass.

Ejecting

In addition to being pulled out of the chamber, the case must also be thrown free of the receiver. This action is called ejection and is created by placing a small projection on one side of the receiver so that, as the bolt and case move to the rear, the case will strike the projection and be expelled from the weapon. This method is used in the .45-cal. pistol. Another method of ejecting the case is to incorporate a spring-loaded ejector in the face of the bolt. In this arrangement the case is flipped from the weapon as soon as its forward end clears the chamber. This method is used in the M14 rifle.

Cocking

Cocking is the retraction of the firing mechanism (firing pin and hammer) against spring pressure so that there will be sufficient energy to fire the cartridge in the next cycle of operation. The firing pin, hammer, or, in some cases, the bolt itself is held in a cocked position by a piece called the *sear*.

Firing is initiated by squeezing a trigger. This movement trips the sear, releasing the firing mechanism (firing pin, hammer or, in automatic weapons, such parts as the bolt group), causing it to move forward with enough force to discharge the round.

AUTOMATIC AND SEMIAUTOMATIC FIRING SYSTEMS

A semiautomatic weapon unlocks, extracts, ejects, cocks, and reloads automatically. However, the trigger must be pulled each time to fire a round. By this definition, the .45-cal. M1911A1 pistol is semiautomatic, though it is often called automatic. A fully automatic weapon keeps on firing as long as the trigger is kept pulled.

Two examples of weapons that can be fired both automatically and semiautomatically are the 7.62-mm M14 rifle and the 5.56-mm M16 rifle.

OPERATING PRINCIPLES

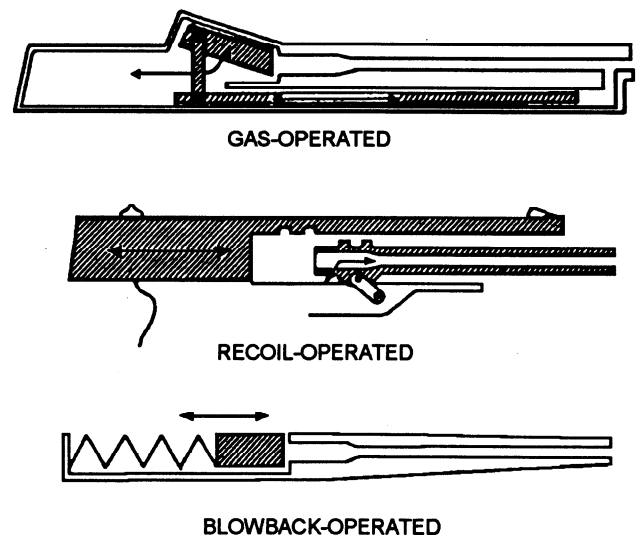
Automatic and semiautomatic weapons are classified by how they obtain the energy required for operation. Fundamentally, small arms obtain their operating energy from the forces of the explosion created when a round of ammunition is fired. The use of these forces does not reduce the effectiveness of the weapon; it simply uses otherwise wasted energy.

Methods of Operation

There are three basic types of operation for automatic and semiautomatic small arms—gas operation, recoil operation, and blowback operation. Figure 2-2 shows the three methods.

GAS OPERATION.—In gas-operated weapons, a portion of the expanding powder gases behind the bullet is tapped off into a gas cylinder located beneath the barrel. (The hole connecting the barrel and cylinder is near the muzzle end.) As the bullet passes this hole, gases push this piston rearward. The piston is connected by a rod to an operating mechanism of the weapon, such as the bolt. The piston carries the bolt rearward with it, unlocking the bolt, extracting and ejecting the case, and cocking the weapon.

RECOIL OPERATION.—As a round is fired, high pressures develop behind the bullet and force it down the barrel. The force behind the bullet is also directed rearward against the breech. If the barrel and bolt are secured to one another, the entire force of recoil is felt on the shooter's shoulder. But, by designing the barrel and breech assembly so they can slide in the frame or receiver, the energy of the rear moving assembly can be used to compress springs, move levers, and so on, necessary to complete the cycle of operation.



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Figure 2-2.—Types of operating systems.

Generally, in recoil-operated weapons, the barrel and the bolt move rearward together for a short distance. Then the barrel is stopped and the bolt (now unlocked) continues to the rear against spring pressure until the empty case is ejected. The force of recoil is also used to cock the weapon and to compress the spring, returning the bolt to its firing position, and chambering a new round in the process.

There are two basic methods of recoil operation for semiautomatic and automatic small arms. They are the long-recoil (Browning) and short-recoil (Maxim) methods.

Long-Recoil Method.—The dynamics of a long-recoil operation are similar to those in straight blowback operation, except that the barrel, breechblock, and component parts recoil together for the complete recoil cycle. This recoil distance must be greater than the length of the complete round. At the end of the recoil stroke, the bolt is held while the barrel counterrecoils alone. One important difference in the long-recoil type of operation is that ejection takes place on counterrecoil instead of recoil. An example of a long-recoil weapon is the Browning designed, Remington model 11 shotgun used by the Navy before and during World War II.

Short-Recoil Method.—The dynamics of short-recoil-operated weapons approach those of the retarded blowback types more nearly than those of the long-recoil type. To eliminate all blowback tendencies, the bolt latch is not released until the propellant gases become ineffective. After unlatching (unlocking), the bolt continues recoiling and in some mechanisms is accelerated by mechanical or gas systems. The barrel is arrested by a spring, a buffer, a stop, or a combination of these and is caused to return by these or the counterrecoiling components. Examples of short-recoil-operated weapons are the .45-cal. pistol and the Browning machine gun.

BLOWBACK OPERATION.—There are some similarities between recoil- and blowback-operated weapons, but there are also several major differences. In recoil operation, the bolt and the barrel are locked together until the bullet has left the barrel and most of the recoil thrust is spent. The combined thrust of the recoiling barrel, bolt, and some other parts is used to operate the weapon. In blowback (inertia) operation, however, the bolt is not locked to the barrel and in most cases the barrel does not recoil. The bolt is held closed by spring pressure and the mass of the breechblock. The initial blow of the exploding cartridge starts the bolt moving rearward, but the weight of the bolt is such that

it does not allow the chamber to be entirely opened until the round has left the bore. Action by a recoil spring returns the bolt to the closed position, chambering anew round.

Thus, the weight of the breechbolt is an important factor in the design and operation of a blowback-operated weapon. When used with low-powered ammunition, it is a suitable arrangement. A military rifle, however, using the standard .30-cal. cartridge and the blowback action would require a 27-pound breechblock.

Besides the submachine gun, many types of so-called pocket automatic pistols and .22-cal. automatic rifles use blowback operations.

Range and Rate of Fire

Every weapon has a certain range (how far the bullet goes) and rate of fire (how fast it fires). The range of a weapon is usually indicated in terms of maximum range and maximum effective range. The rate of fire of an automatic weapon is stated as the cyclic rate of fire and the sustained rate of fire.

MAXIMUM RANGE.—Maximum range is the greatest distance that the bullet will travel.

MAXIMUM EFFECTIVE RANGE.—Maximum effective range is the greatest distance at which a weapon may be expected to fire accurately to inflict damage or casualties.

CYCLIC RATE OF FIRE.—The cyclic rate of fire is the maximum rate at which a weapon will fire in automatic operation, stated in rounds per minute (rpm).

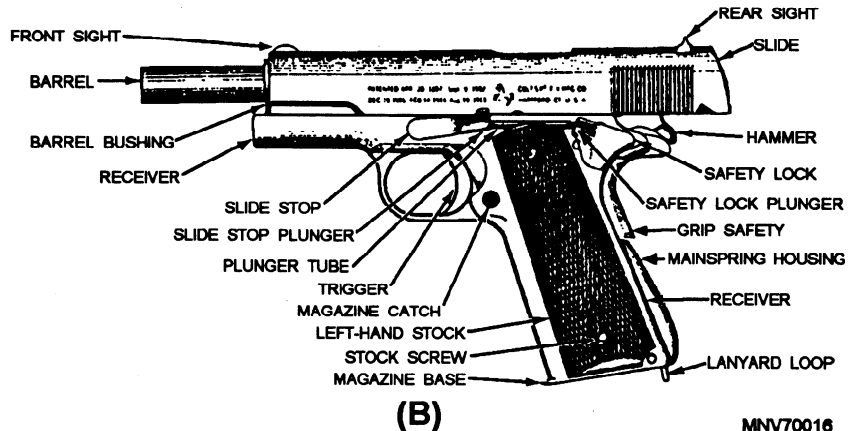
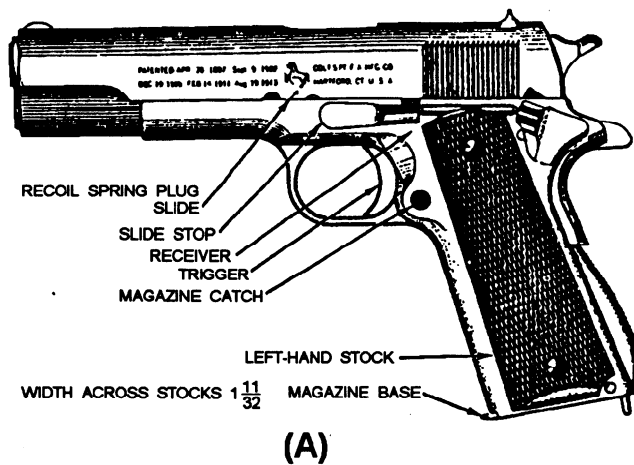
SUSTAINED RATE OF FIRE.—The sustained rate of fire is normally indicated in a chart that correlates the average number of rounds fired per minute with the number of minutes this rate can be sustained without causing damage to the weapon.

HANDGUNS

The Navy currently has three types of handguns in its inventory: the M1911A1 .45-caliber semiautomatic pistol; the 9mm, M9 semiautomatic pistol; and the .38-caliber revolver. We will discuss the operation, disassembly, and assembly of the .45-caliber and 9mm pistols below.

M1911A1 .45-CALIBER PISTOL

The .45-cal. M1911A1 pistol (fig. 2-3) is a recoil-operated, semiautomatic, magazine-fed, self-loading handgun with fixed sights. It is often called a .45-cal.



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Figure 2-3.—.45-cal. M1911A1 semiautomatic pistol: A. Slide closed; B. Slide open.

semiautomatic pistol (SAP) or a .45-cal. autoloading Colt (the manufacturer) pistol (ACP). This text will refer to it as a .45-cal. pistol.

The magazine holds seven rounds when fully loaded; one round is fired with each squeeze of the trigger. Rifling in the barrel is machined for a left-hand twist (the only Navy weapon with left-hand rifling). Empty, the pistol weighs approximately 2 1/2 pounds. It has a maximum range of a little over 1,600 yards and a maximum effective range of about 50 yards.

Disassembly

Care of the .45-Cal. pistol includes daily preventive maintenance, prefiring cleaning, and postfiring cleaning. For daily maintenance the pistol need not be disassembled; but, for the prefiring and postfiring cleaning, the pistol should be disassembled.

General disassembly (fig. 2-4) is necessary for normal care and cleaning, and after the weapon has been fired.

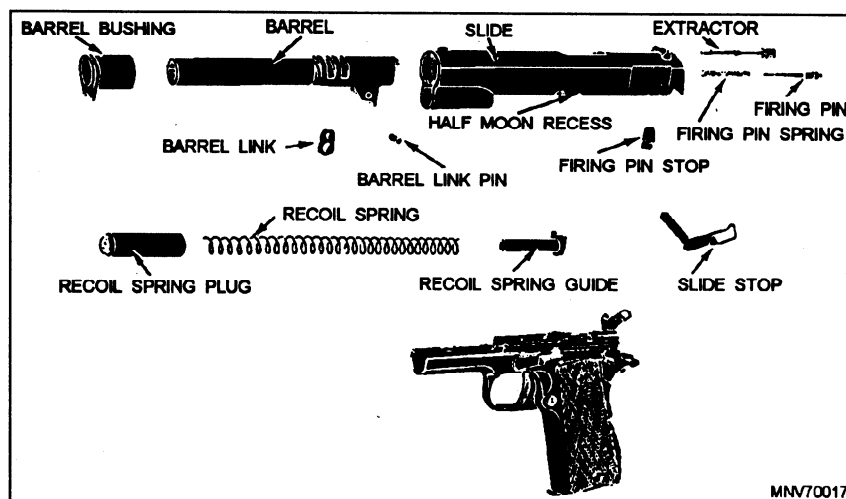


Figure 2-4.—A field-stripped .45-cal. pistol.

To do a good job of cleaning and inspecting the weapon, you must know the names of the parts. By knowing the names of the parts, you will also be able to better understand how the weapon operates.

GENERAL DISASSEMBLY (FIELD-STRIPPING).—Before you performing work on any weapon, be sure the weapon is clear of ammunition. On the M1911A1, you do this by removing the magazine, pulling the slide to the rear, and inspecting the chamber. When you have cleared the weapon, perform the following steps:

1. Cock the hammer and put the safety lock in its UP (safe) position. Depress the recoil spring plug and turn the barrel bushing about one-quarter turn clockwise. This releases the tension on the spring. Allow the spring to expand slowly, under control, to prevent injury or loss of parts. Turn the recoil spring plug counterclockwise and remove it from the recoil spring. Move the safety lock back down to its FIRE position.

2. Draw the slide to the rear until the half-moon recess (on the slide) is directly above the projection on the slide stop. Push out the slide stop from right to left.

3. Turn the pistol upside down and draw the receiver to the rear, disengaging it from the slide. Lay the receiver down.

4. Draw the recoil spring and its guide to the rear and out of the slide.

5. Take the barrel bushing out of the slide by turning it counterclockwise as far as it will go, then lifting up.

6. Lay the barrel link forward and pull the barrel out of the muzzle end of the slide.

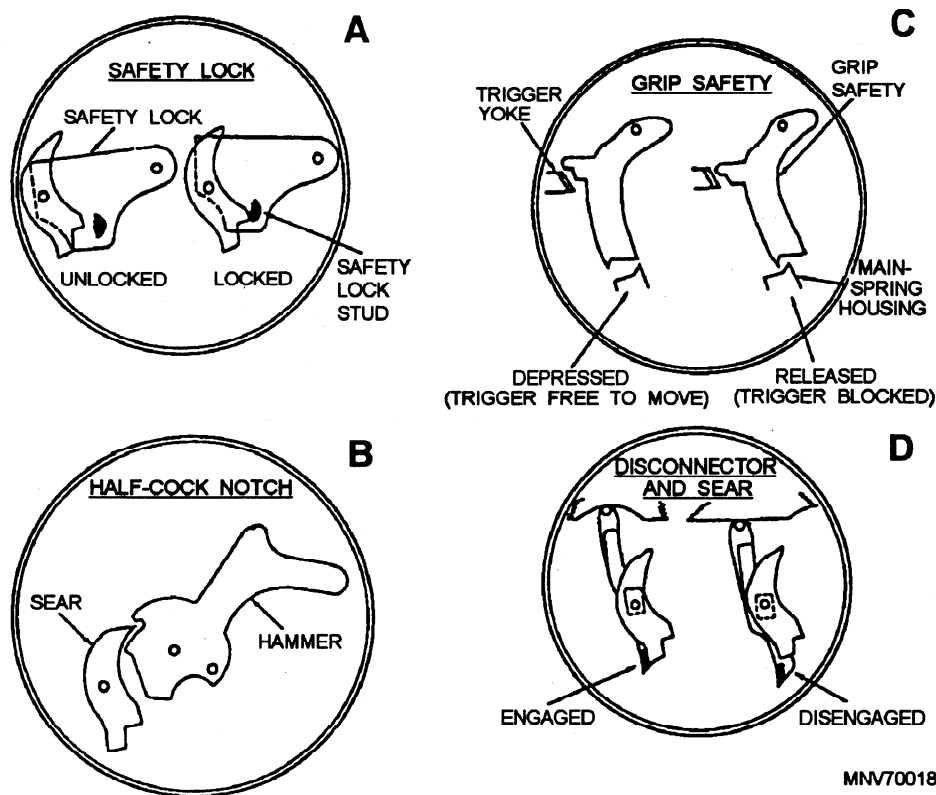
7. Take out the firing pin by pressing on the rear of the firing pin with any pointed object until you can slide out the firing pin stop. Keep your fingers over the firing pin, allowing the spring tension to ease; then lift both the firing pin and the spring from the slide.

8. Pry the extractor out of the rear of the slide.

Safeties

There are three safety features and one positive safety on the .45-cal. pistol. The three safety features are the half-cock notch, the grip safety, and the disconnecter. The positive safety is the safety lock (sometimes called the thumb safe).

The safety lock positively locks the slide in the forward position. In addition, a stud on the safety lock (fig. 2-5, view A) blocks the shoulders of the sear to



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Figure 2-5.—Safeties on the .45-cal. pistol.

prevent any movement of the sear out of the full-cock notch of the hammer.

The half-cock notch is the notch just above the full-cock notch (fig. 2-5, view B). It has a lip that keeps the sear from moving out of the notch when pressure is applied to the trigger.

The grip safety (fig. 2-5, view C) indirectly stops any movement of the sear by blocking trigger movement. If the trigger cannot be actuated, the sear cannot move and the hammer will not fall.

The disconnecter (fig. 2-5, view D) prevents firing unless the slide is fully forward and locked. Any time the slide is not fully forward, the nose of the disconnecter is forced downward. In this condition the disconnecter spade does not contact the sear when the trigger is pulled. When the trigger is pulled, the disconnecter will be pushed to the rear; but the sear remains in position, holding the hammer to the rear.

When the slide is forward, the disconnecter rides up into a recess on the underside of the slide. The spade of the disconnecter (dark area) bears against lugs on the sear. When the trigger is pulled, the trigger yoke pushes back against the disconnecter spade, which transmits the motion to the sear, rotating the sear nose out on the full-cock notch of the hammer, and the weapon fires.

Cycle of Operation

Refer to figures 2-3 and 2-4 as we explain the functions of the pistol. We will assume that a loaded magazine has been placed in the weapon, a round loaded into the chamber, the grip safety depressed, the trigger squeezed, and the round fired. The cycle of operation now begins.

As the gases from the burned powder expand, the bullet is forced down the barrel while an equal force is directed rearward against the slide. The slide and the barrel are locked together at this point, and both are forced rearward. The barrel link is pinned to the receiver by the slide stop shaft and to the barrel by the barrel link pin. As the barrel moves rearward, it pivots on the slide stop shaft and is moved downward as well as to the rear. As the barrel locking ribs are disengaged from the recesses in the slide, unlocking is completed.

As the slide moves aft in recoil, the extractor pulls the empty case along with it. Extraction is completed when the cartridge clears the chamber.

Ejection occurs when the cartridge strikes the stationary ejector, pivots on the extractor, and flips from the weapon through the ejection port.

Cocking began as soon as the slide started its recoil movement. The hammer is moved rearward and the hammer strut is pushed down against the mainspring, compressing it. When the slide strikes the recoil spring guide collar, its rearward movement is stopped. The recoil spring then causes the slide to begin its forward movement. The hammer follows the slide for a short distance. Then the sear, which bears against the hammer through the action of the sear spring, enters the full-cock notch of the hammer and holds it in a cocked position. Feeding starts as soon as the slide, moving to the rear, clears the top of the magazine. The magazine follower, under pressure from the magazine spring, forces the top round against the lips of the magazine. This places the top cartridge in position to be picked up by the face of the slide during its forward movement.

Chambering occurs when the forward moving slide pushes a new round into the chamber. As the bullet is pushed up the ramp into the chamber, the base of the cartridge slides up the face of the slide. As this happens the groove on the base of the cartridge is engaged by the hooked extractor.

After chambering, the slide continues forward a small distance, pushing the barrel ahead of it. As the barrel moves, it pivots up and forward on the barrel link. The locking ribs on the barrel enter the locking recesses in the slide, thereby locking the two together.

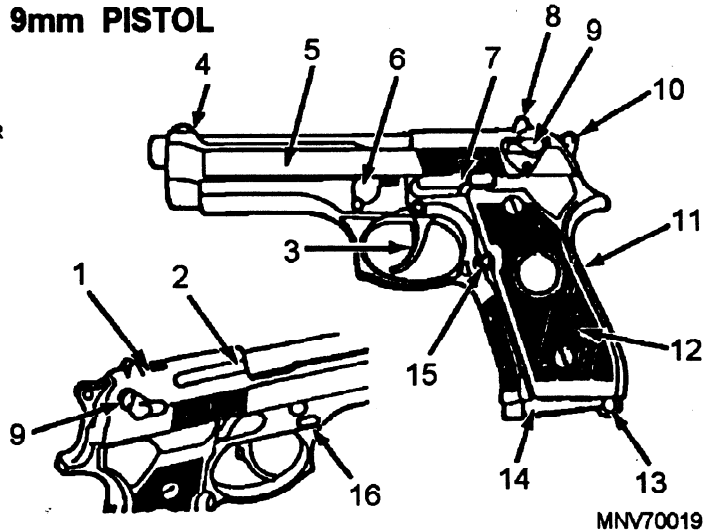
Firing will start the cycle all over again. When the grip safety is depressed and the trigger is squeezed, the trigger yoke presses against the disconnecter, which pushes aft on the sear. The sear rotates on its pin, disengaging from the notch on the hammer. The mainspring pushes up on the hammer strut, rotating the hammer forward. The hammer strikes the firing pin which, in turn, strikes the cartridge primer.

For more information on the M1911A1 .45-Cal. pistol refer to U.S. Army TM 9-1005-211-12.

Section I. GENERAL INFORMATION

9mm PISTOL

1. FIRING PIN BLOCK
2. EXTRACTOR/LOADED CHAMBER INDICATOR
3. TRIGGER
4. FRONT SIGHT
5. SLIDE ASSEMBLY
6. DISASSEMBLY LEVER
7. SLIDE STOP
8. REAR SIGHT
9. DECOCKING/SAFETY LEVER
10. HAMMER
11. RECEIVER
12. GRIP
13. LANYARD LOOP
14. MAGAZINE (SEATED)
15. MAGAZINE CATCH ASSEMBLY
16. DISASSEMBLY BUTTON



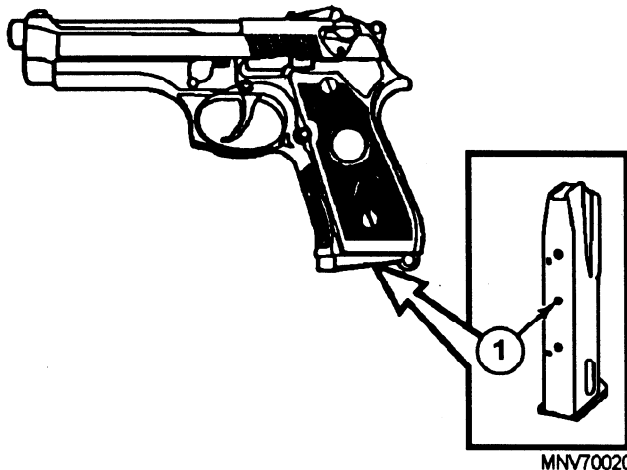
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Figure 2-6.—9mm, M9 semiautomatic pistol.

9MM, M9 SEMIAUTOMATIC PISTOL

The 9-mm, M9 pistol (fig. 2-6) is a single- or double-action, short-recoil-operated, semiautomatic, magazine-fed, self-loading handgun with fixed sights. The M9 is primarily designed as a personal defense sidearm for guards, sentries, and boarding and landing parties.

The M9 is chambered for the 9-mm cartridge. The magazine (fig. 2-7) has a capacity of 15 rounds, which is more than double that of the traditional magazine of the same length. Empty, the pistol weighs approximately 2.1 pounds. It has a maximum range of 1,962.2 yards (1,800 meters) and a maximum effective range of 54.7 yards (50 meters).



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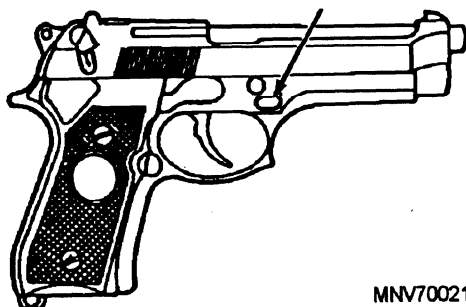
Figure 2-7.—M9 magazine.

Operation

The M9 pistol has a short recoil system using a falling locking block. The pressure developed by the expanding gases of a fired round recoils the slide and barrel assembly. After a short distance, the locking block is disengaged from the slide, the barrel stops against the frame, and the slide continues its rearward movement. The slide then extracts and ejects the fired cartridge case, cocks the hammer, and compresses the recoil spring. The slide moves forward, stripping the next cartridge from the magazine, and feeds it into the chamber. After the last cartridge has been fired and ejected, the slide and barrel assembly will remain open by the magazine follower pressing up on the slide stop lever.

Disassembly

Disassembly of the M9 is covered by current 3-M Systems MRCs and is normally limited to the general disassembly (field-stripping) level. The M9 is designed for ease of field stripping under adverse conditions. With practice, you should be able to field strip it in seconds. Before you begin disassembling the pistol, remove the magazine and be sure that the pistol is unloaded. You can disassemble and assemble the pistol with the safety in either the ON or OFF position. But for safety purposes, and to prevent damage to the pistol, always engage the safety (ON position, warning dots covered, down position) before you begin disassembly.



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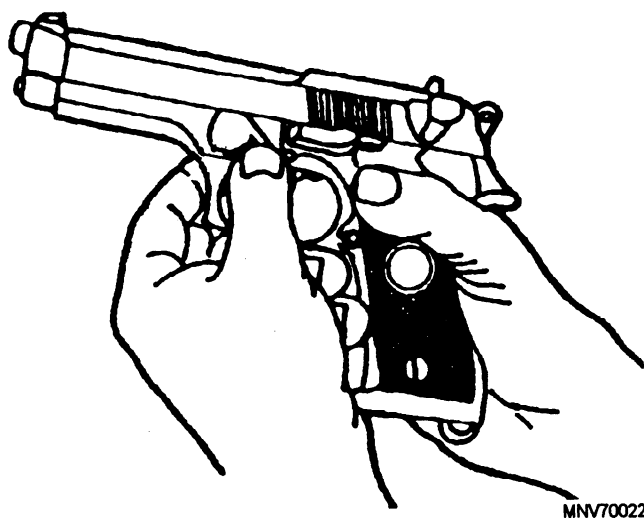
Figure 2-8.—Disassembly lever release button.

To field strip the M9, hold the pistol in your right hand with the muzzle slightly elevated. With your forefinger, press the disassembly lever release button (fig. 2-8), and with your thumb rotate the disassembly lever (fig. 2-9) downward until it stops. Pull the slide and barrel assembly (fig. 2-10) forward and remove it from the receiver assembly.

WARNING

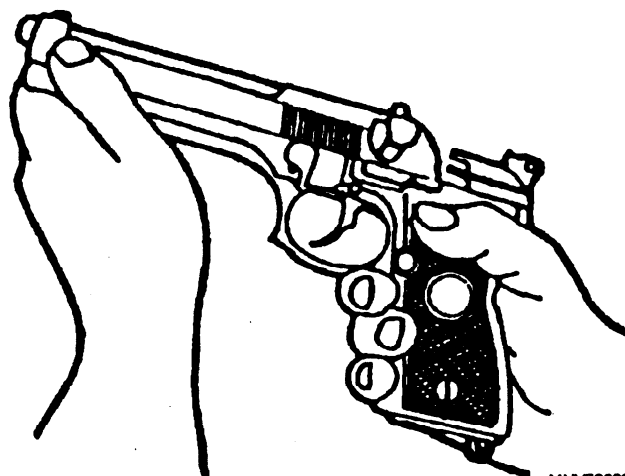
Be careful as you remove the recoil spring and the spring guide. The assembly is under spring tension. If you let it fly from the pistol, it could injure you or become damaged or lost.

Firmly hold the slide in the palm of one hand and slightly compress the recoil spring and spring guide (fig. 2-11). At the same time, lift and remove the recoil spring and the spring guide (fig. 2-12). Be careful as you release the spring tension. After you have released the spring tension, separate the recoil spring from the spring guide (fig. 2-13).



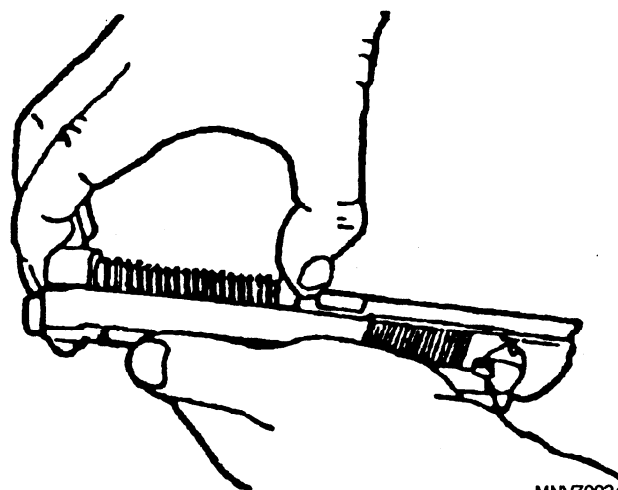
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Figure 2-9.—Disassembly lever.



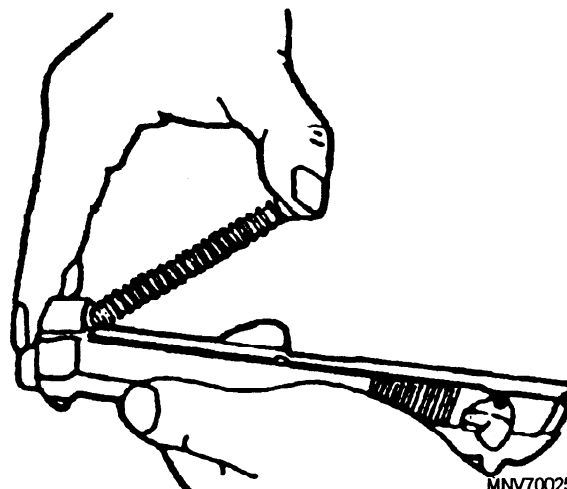
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Figure 2-10.—Removal of slide and barrel assembly.



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Figure 2-11.—Compressing the recoil spring.



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Figure 2-12.—Removing the recoil spring and spring guide.



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Figure 2-13.—Recoil spring and spring guide.

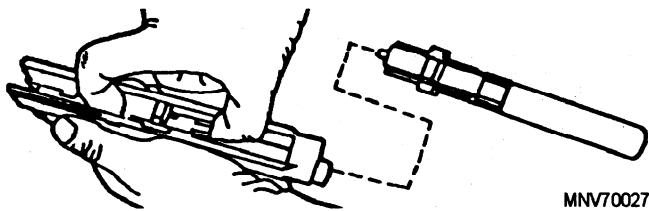


Figure 2-14.—Removing the barrel from the slide.

To remove the barrel from the slide, push in on the locking block plunger (fig. 2-14) while pushing the barrel forward slightly. Lift and remove the locking block and the barrel assembly from the slide.

When you have disassembled the pistol, check the parts for damage or excessive wear as you clean them. For more information on the M9 pistol, refer to Navy SW 370-AA-OPI-010/9mm.

SHOULDER WEAPONS

Shoulder weapons are designed to be held with both hands; they are braced against the shoulder to absorb the force of recoil and to improve accuracy. The primary Navy shoulder weapons are the M14 rifle, the Remington M870 shotgun, and the M79 grenade launcher. We will discuss the operation and maintenance of each of these weapons.

M14 RIFLE

The M14 rifle (fig. 2-15) is a lightweight, air-cooled, gas-operated, magazine-fed shoulder weapon. It is designed for both semiautomatic fire and fully automatic fire (750 rounds per minute). The M14 is chambered for 7.62-mm cartridges and can

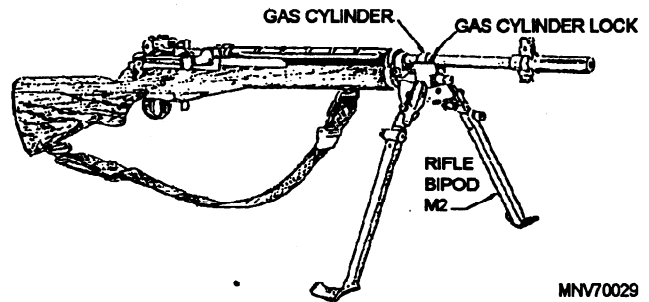


Figure 2-16.—7.62-mm M14 rifle with the bipod installed.

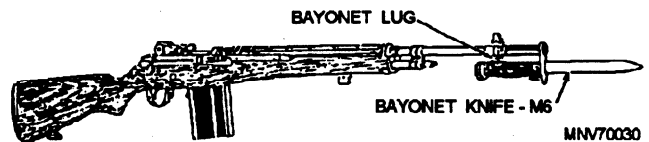


Figure 2-17.—7.62-mm M14 rifle with the M6 bayonet knife.

accommodate a 20-round cartridge magazine, the M2 rifle bipod (fig. 2-16), and the M6 bayonet (fig. 2-17).

M14 Rifle Controls

Figure 2-18 shows an M14 rifle equipped with a selector for automatic operation. Position the selector as in view A for semiautomatic fire and as in view B for automatic fire. Most of the M14 rifles issued to the Navy will not be equipped with the automatic selector; only semiautomatic fire will be possible.

The safety is located just forward of the trigger guard. To prevent the weapon from firing, press the safety rearward. To permit firing, press the safety forward. The safety can only be engaged when the weapon is cocked.

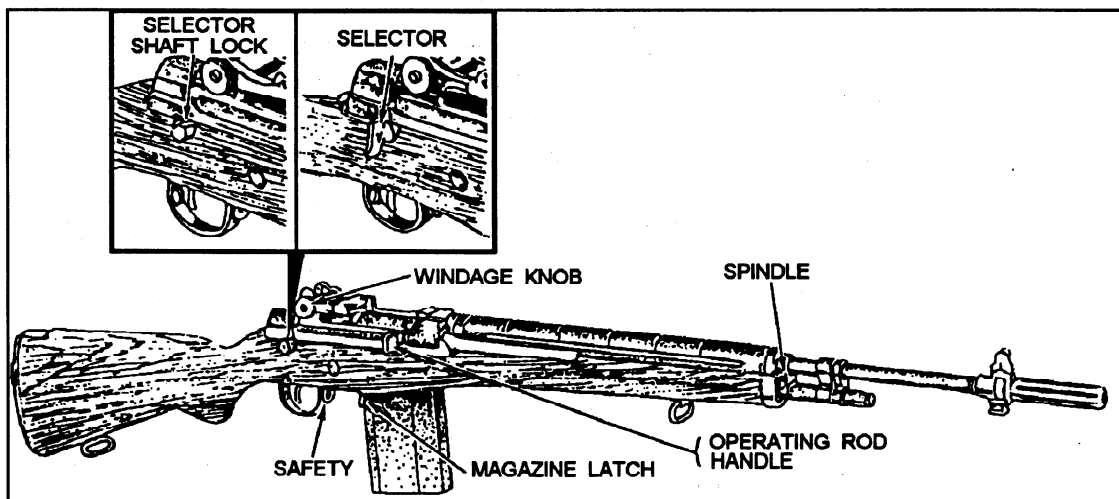


Figure 2-15.—7.62-mm M14 rifle and controls—right-front view.

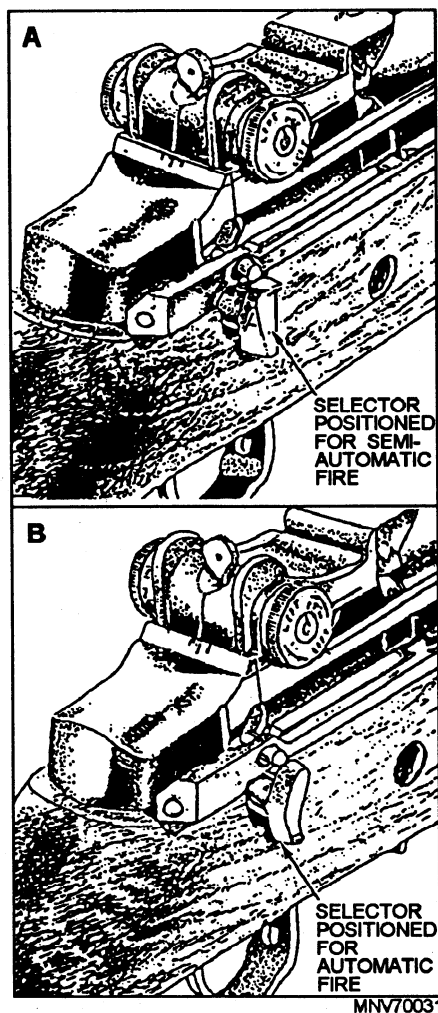


Figure 2-18.—Selector for automatic and semiautomatic fire.

If a magazine is in the rifle, press the magazine latch (fig. 2-19) and remove the magazine. Pull the operating handle all the way to the rear and check to see that the weapon is free of ammunition. Then ease the operating rod forward to the locked position and move the safety to the rear (SAFE position).

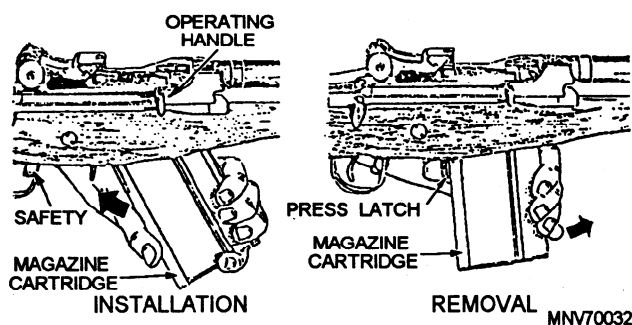


Figure 2-19.—Installation and removal of the magazine.

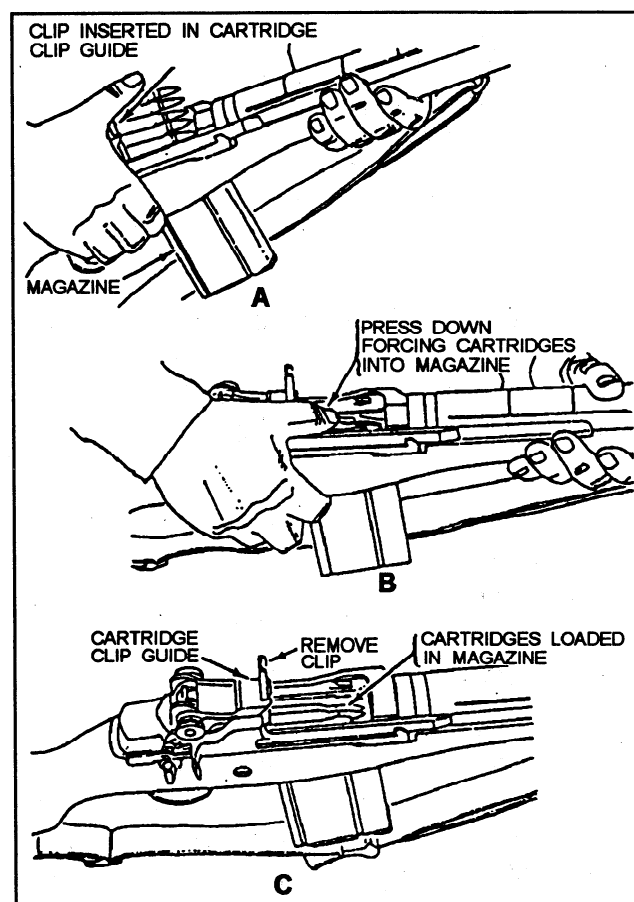


Figure 2-20.—Loading the magazine through the cartridge clip guide.

There are two methods for reloading an empty magazine. Figure 2-20 shows the method with the magazine in the rifle. (This method should only be used in the field since it creates a possible accidental firing situation.) After the last round is fired from a magazine, the magazine follower will engage the bolt lock and hold the bolt in the rear position. If this fails to happen, make sure you did not have a misfire, then pull the operating handle to the rear and manually depress the bolt lock (located on the left side of the receiver), ease the bolt down against it, then engage the safety. Insert a 5-round clip into the cartridge clip guide, as shown in figure 2-20, and push the cartridges down into the magazine. Four 5-round clips will fully load a magazine. After you have unloaded and removed the last clip, pull the operating handle to the rear to release the bolt lock; then release the handle. This will let the bolt go into battery, stripping and feeding the top round into the chamber. The weapon is now ready to fire.

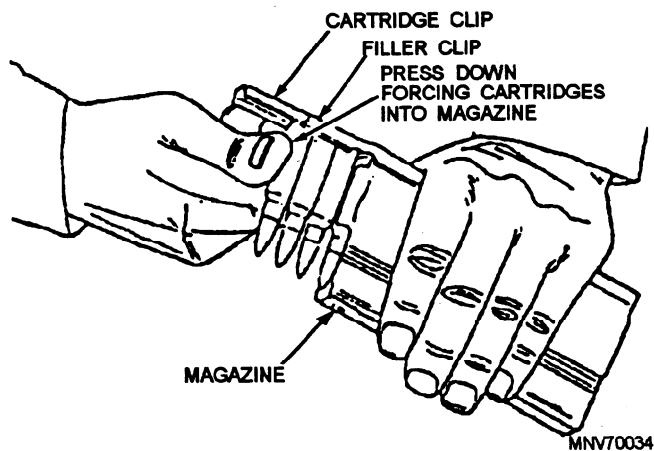


Figure 2-21.—Loading the magazine with a loading tool.

The safest way to reload a magazine is shown in figure 2-21. Each bandolier containing the 5-round clips also contains a magazine loading tool. Insert the tool over the top rear of the magazine as shown in figure 2-21, insert a 5-round clip into the loading tool, and press the cartridges into the magazine.

To load a full magazine into a rifle, insert the front end of the loaded magazine well into the front catch until the front catch snaps into engagement, then pull the magazine rearward and upward until the magazine latch locks it into position (fig. 2-19).

The gas spindle valve (fig. 2-22) controls the gases used in firing the rifle. When the slot of the spindle valve is in the vertical or ON position (upper view), the valve is open and directs gases to the operating piston for ordinary functioning of the rifle. When the slot is in the horizontal or OFF position (lower view), the spindle valve is closed. This permits the full pressure of the gas to be used in propelling a rifle grenade or line-throwing projectile.

The rear sight controls consist of a windage knob and a pinion assembly. (See figure 2-15.) The windage knob is used to adjust the sight laterally. Turn the knob clockwise to move the sight to the right and counterclockwise to move the sight to the left. The pinion assembly adjusts the sight aperture vertically. Turn the pinion clockwise to raise the sight and counterclockwise to lower the sight.

Firing the M14 Rifle

If your command does not want the rifle to fire on automatic, the selector will be replaced by a selector

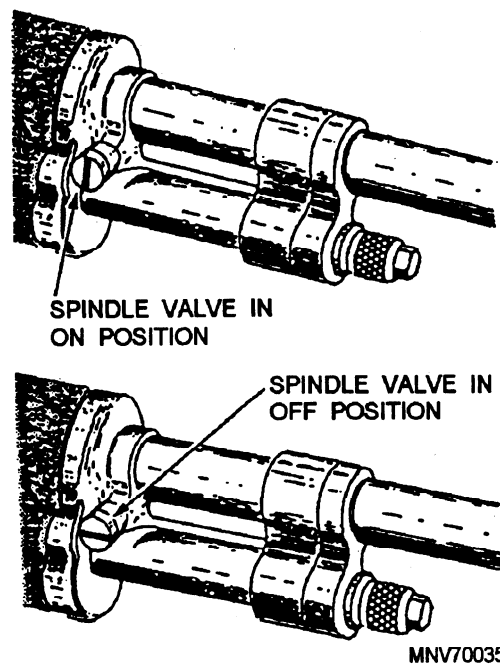


Figure 2-22.—Gas spindle valve in the ON and OFF positions.

shaft lock (See figure 2-15.) so that only semiautomatic fire is available.

To fire a rifle equipped with a selector shaft lock, simply push the safety forward and then fire a round with each squeeze of the trigger.

To fire semiautomatic fire on a rifle equipped with a selector, position the selector for semiautomatic fire and then fire a round with each squeeze of the trigger.

To fire automatic fire with a selector (rifle cocked), proceed as follows:

1. Position the selector for automatic fire.
2. Push the safety forward.

3. Squeeze the trigger. The rifle will fire automatically as long as the trigger is squeezed and there is ammunition in the magazine. Release the trigger to cease firing.

4. After the last round is fired, the magazine follower (a spring-driven plate in the magazine that forces cartridges upward as rounds are expended and cases ejected) actuates the bolt lock, locking the bolt in the rearward position. When you have removed the empty magazine inserted a loaded one, release the bolt lock by retracting the operating rod, thereby drawing the bolt rearward; then close the bolt. As the bolt assembly is closed, the top cartridge in the magazine is pushed forward into the chamber.

Unloading the M14 Rifle

To unload the M14 rifle, proceed as follows:

1. Push the safety to the SAFE (back) position:
2. Grasp the magazine with your thumb on the magazine latch, and squeeze the latch to release it. Push the magazine forward and downward to disengage it from the front catch, and then remove it from the magazine well, as shown in the right-hand view of figure 2-19.
3. Pull the operating rod handle all the way to the rear and lock it using the bolt catch.
4. Inspect the chamber to make sure it is clear.

The rifle is clear only when no round is in the chamber, the magazine is out, the safety is set (to the rear), and the bolt is in the REAR position.

Field-Stripping the M14 Rifle

Figure 2-23 shows how the M14 rifle breaks down into seven group assemblies. You should be able to disassemble the rifle to this extent for cleaning, lubrication, and maintenance. This procedure is called field-stripping the rifle. The names of the numbered group assemblies shown in figure 2-23 are as follows:

1. Magazine

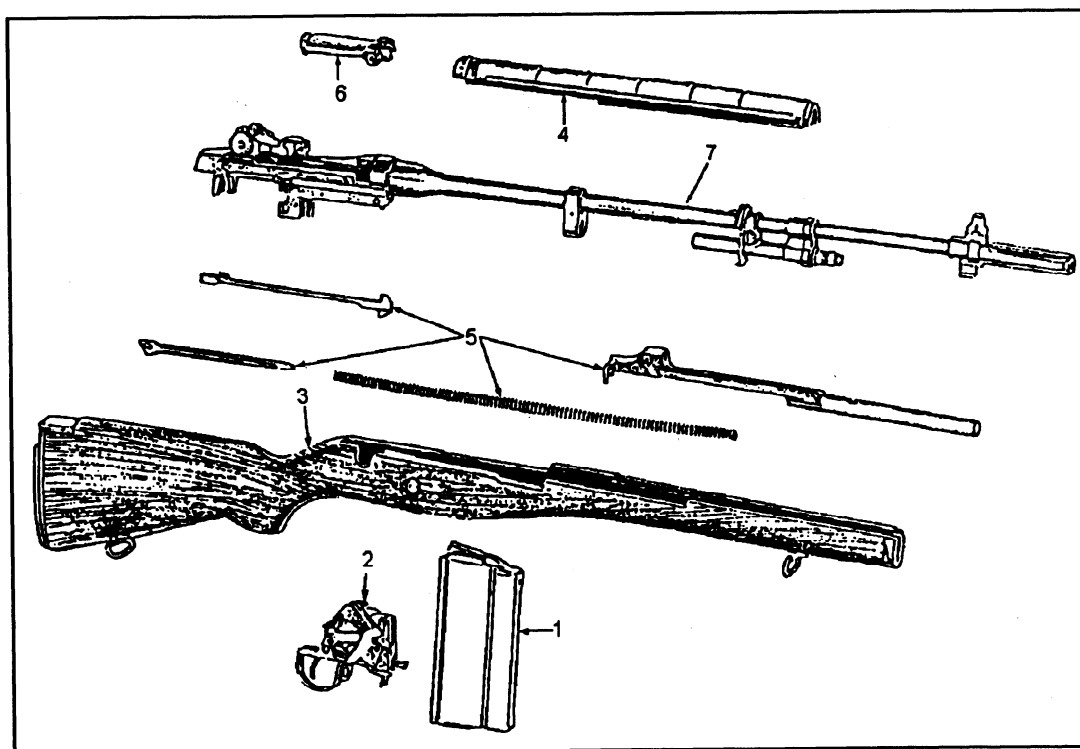
2. Firing mechanism
3. Stock with butt plate assembly
4. Handguard assembly
5. Operating rod and connector group
6. Bolt assembly
7. Barrel and receiver group

To withdraw the firing mechanism (No. 2 in fig. 2-23) from the stock, proceed as follows:

1. Remove the magazine.
2. Place the safety in the SAFE position after making sure the rifle is cocked.
3. Disengage the hooked end of the trigger guard from the firing mechanism housing.
4. Swing the trigger guard away from the stock (but do not rotate it more than 90 degrees), and pull straight away from the stock to draw out the firing mechanism.

To remove a stock with a butt plate assembly after removing the firing mechanism, proceed as follows:

1. Grasp the receiver firmly with one hand and strike the butt of the stock sharply with the palm of the other.
2. Lift the stock from the barrel and receiver group.



MNV70036

Figure 2-23.—Group assemblies of the M14 rifle.

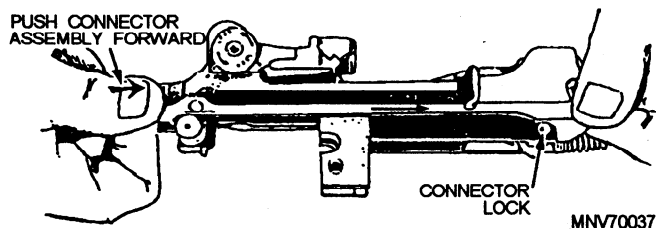


Figure 2-24.—Disengaging the connector assembly.

To separate the operating rod and connector group from the barrel and receiver group, proceed as follows:

1. Depress the rear sight to the lowest position and turn the barrel and receiver group on its side with the connector assembly upward.

2. If the rifle has a selector, press in and turn the selector until the face marked A is toward the rear of the sight knob and the projection forward is at an angle of about 35 degrees. Then, remove the connector assembly as indicated in steps 3 and 4 below.

3. If the rifle has a selector shaft lock, press forward on the rear of the connector assembly with your right thumb, as shown in figure 2-24, until you can lift the front end off the connector lock.

4. Rotate the connector assembly about 35 degrees clockwise until the slot at the rear is aligned with the elongated stud on the sear release (fig. 2-25); then lower the front end of the connector assembly and lift it off the sear release.

The next step is to remove the operating rod spring guide, the operating rod spring, and the operating rod. These parts are identified as 2, 3, and 4 respectively in figure 2-26. The correct step-by-step procedure is as follows:

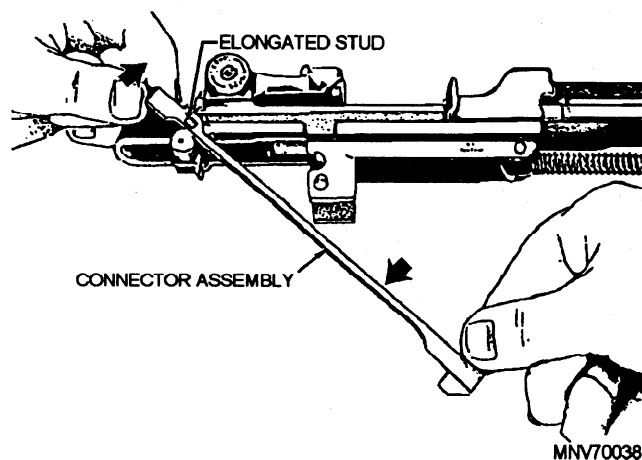


Figure 2-25.—Removing the connector assembly.

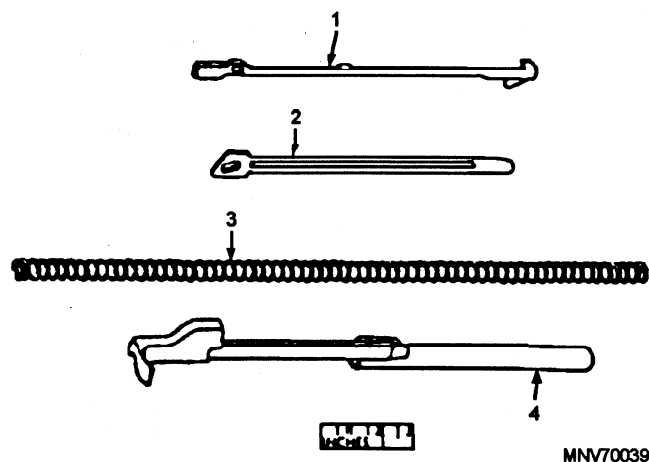


Figure 2-26.—Component parts of the operating rod and connector group.

1. With the barrel and receiver group upside down, pull forward on the operating rod spring, relieving pressure on the connector lock pin. Pull the lock outward to disconnect the operating rod spring guide.

2. Remove the operating rod spring guide and the operating rod spring. Turn the barrel and receiver group right side up.

3. Retract the operating rod until the key on its lower surface coincides with the notch in the receiver. Lift the operating rod free and pull it to the rear, disengaging it from the operating rod guide.

4. To remove the bolt, after removing the operating rod, grasp the bolt roller that engages with the operating rod and slide it forward. Lift the bolt upward and outward to the right with a slight rotating motion and remove it from the receiver. The weapon is now field-stripped for cleaning.

Reassembly of this weapon is basically the reverse of disassembly. A step-by-step procedure for reassembly and other maintenance procedures is covered in the U.S. Army FM 23-8.

SHOTGUNS

Shotguns used by the armed forces are military versions of civilian models made to military specifications. The Remington model 870 (M870) and the Mossberg model 500 (M500) are the Navy's standard issue riot-type shotguns. In this section we will describe the Remington M870 (fig. 2-27) in detail, then note how the Mossberg 500 differs. The Mossberg 500 is very similar to the Remington 870 in construction and operation.



Figure 2-27.—Remington M870 shotgun.

REMINGTON M870 SHOTGUN

The M870 shotgun, used by the Navy for guard work, is a manually operated, magazine-fed (tubular), pump-action shoulder weapon.

Technical Description

The essential features of the Remington M870 shotgun are displayed here in chart form for easy reference.

Length of shotgun	39 inches (approximately)
Length of barrel	20 inches
Magazine capacity-rounds	4
Shell (gauge)	12
Ammunition	12 gauge, 2 3/4 inch 00 buck, military round
Safety	Crossbolt type

Functioning of the Remington M870

The M870 shotgun can be loaded and unloaded in several different ways. The following paragraphs describe the different options for loading and unloading the M870 and how to operate the mechanical safety. A single load puts a round directly into the chamber for fast firing, while a magazine load fully loads the tubular magazine, but does not chamber a round. Loading the barrel from the magazine chambers a round from the loaded tubular magazine for firing.

SAFETY.—Before loading or unloading the weapon, push the safety (fig. 2-28) across the rear of the trigger, left to right, to the SAFE position (the red band on the safety will not show).

FIRE POSITION.—Push the safety across to the FIRE position (the red band on the safety will show). The trigger can then be pulled to fire the gun.

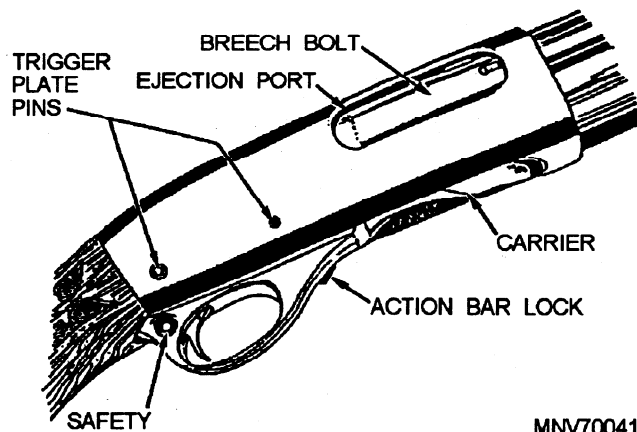


Figure 2-28.—Remington M870 receiver nomenclature.

SINGLE LOAD.—Push the safety to the SAFE position. Press in the action bar lock (fig. 2-28) if the action is cocked and pull the fore-end (forward handgrip) fully to the rear. Place the shell into the open ejection port upon the downthrust carrier. Slide the fore-end toward the muzzle to load the shell into the barrel chamber and lock the action closed.

MAGAZINE LOAD.—Push the safety to the SAFE position. Slide the fore-end completely forward to close the action. Turn the gun bottom upward and press the shell against the carrier, then forward fully into the magazine. Make sure the rim of the shell snaps past the shell latch to prevent the shell from sliding backover the carrier. Should this occur, open the action or, if necessary, remove the trigger plate assembly (fig. 2-29), if the gun is cocked, to remove the shell.

LOADING THE BARREL FROM THE MAGAZINE.—Shells can be fed from the loaded magazine by simply pumping the fore-end. Press in the action bar lock if the gun is cocked. Pump the fore-end back and forth to open and close the action.

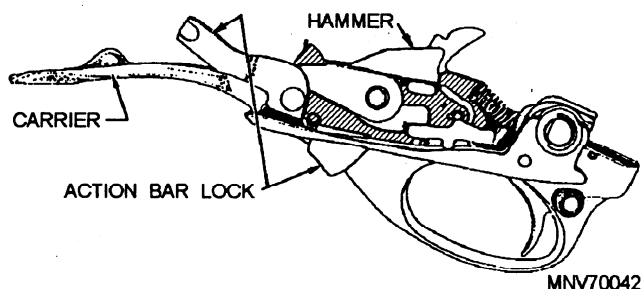


Figure 2-29.—M870 trigger plate assembly.

UNLOADING THE GUN.—Push the safety to the SAFE position. Press in the action bar lock; pull the fore-end (fig. 2-30) slowly rearward until the front end of the shell from the barrel is even with the ejection port in the receiver. Lift the front of the shell outward and remove it from the ejection port. Continue pulling the fore-end back fully until the next shell releases from the magazine. Roll the gun sideways to allow the released shell to drop from the ejection port. Close the action by pushing forward on the fore-end. Continue this procedure until the magazine and the gun are empty.

CAUTION

Open the action and check the shell chamber in the breech and the magazine to make sure no rounds remain in the gun.

UNLOADING THE BARREL ONLY.—Push the safety to the SAFE position. Press in the action bar lock and pull the fore-end rearward until the front end of the shell from the barrel is even with the front end of the ejection port. Lift the front end of the shell from the receiver as described previously. You can now place a shell with different powder and shot combination into the chamber and close the action without disturbing the shells in the magazine.

Remington M870 Operating Cycle

The entire operating cycle of the M870 shotgun is completed by pulling the trigger, sliding the fore-end rearward to open the action, and sliding the fore-end forward again to close the action. The fore-end is mounted on double-action bars and is fully controlled and operated by the shooter.

Maintenance

The following discussion on maintenance of the M870 shotgun covers only action necessary for routine maintenance of the weapon. If you become involved in

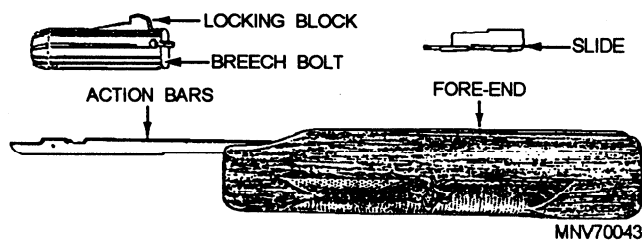


Figure 2-30.—M870 fore-end assembly.

maintaining the M870 shotgun, perform the maintenance according to the MRCs for the weapon.

Before you begin disassembling the weapon, be sure no shells remain in the chamber or the magazine

BARREL.—To remove and clean the barrel, push the safety to the SAFE position. Open the action, unscrew the magazine cap, and pull the barrel from the receiver. Replace the magazine cap on the end of the magazine tube. To clean the barrel, use a cleaning rod with a lightly oiled cloth. If powder fouling remains in the barrel, use a powder solvent to scrub the bore. After using solvent, wipe the barrel clean and re-oil it very lightly. Replace the barrel by removing the magazine cap, inserting the barrel in the receiver, and replacing the magazine cap.

TRIGGER PLATE ASSEMBLY.—With the safety pushed to the SAFE position, cock the action. Tap out the front and rear trigger plate pins (fig. 2-28). Lift the rear of the trigger plate from the receiver, then slide it rearward to remove it from the gun. Clean the trigger assembly as a unit by brushing it with a solvent. Wipe the trigger assembly dry and re-oil it very sparingly. As you replace the plate assembly, make sure the action bar lock enters the receiver easily and operates in position.

FORE-END ASSEMBLY UNIT.—Push the safety to the SAFE position. Close the action and remove the magazine cap and the barrel. Reach into the bottom of the receiver and press the left shell latch inward. Remove the fore-end by sliding it forward off the magazine tube. After you have removed the fore-end assembly from the gun, you may remove the breech bolt parts and the slide from the ends of the action bars.

NOTE

The top right edge of the slide may bind on the bottom front edge of the ejector port in the receiver. To free the slide, push downward on the front end of the bolt.

It is not necessary to disassemble the bolt for routine cleaning. Brush it with solvent to clean it; then wipe it dry.

To reassemble the weapon, reverse the disassembly steps. The following procedures will help make reassembly easier.

When you assemble the fore-end parts, be sure the gun is cocked. During this assembly, place the slide in

the correct position on the ends of the double-action bar. Place the breech bolt assembly, which includes the attached locking block assembly, over the slide on the action bars. Insert the end of the action bars into the matching grooves in the receiver. Move the fore-end slowly until contact is made with the front end of the right shell latch. Press the front right shell latch into the side of the receiver and continue moving the fore-end past this latch until contact is made with the left shell latch. Press the front of the left shell latch in to allow the fore-end assembly to pass and move freely into the receiver. Assemble the barrel to the receiver and tighten firmly with the magazine cap. This completes the assembly of the shotgun.

For further information on the Remington M870 shotgun, refer to the U.S. Air Force TM TO-11W3-6-2-1.

MOSSBERG M500 SHOTGUN

While very similar to the M870, the Mossberg M500 has a few significant differences. The following is a brief description of the differences that affect operation of the weapon. Figure 2-31 illustrates the

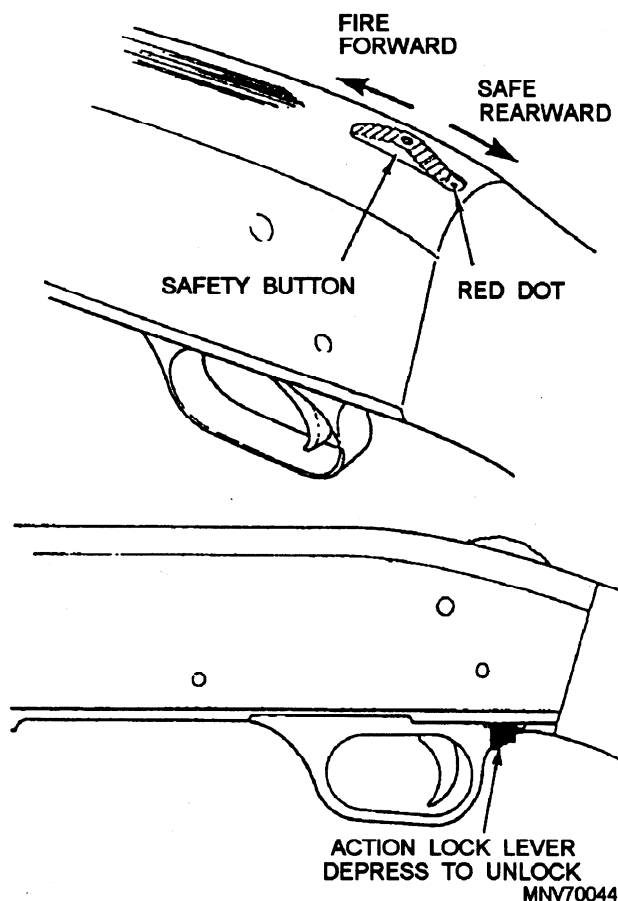


Figure 2-31.—Mossberg M500 shotgun safety and action release.

location of the safety switch and the action locklever on the M500 shotgun. The M500 safety switch is located on the top of the receiver. The action lock release is located behind the trigger guard. The M870 has the safety switch in the trigger guard and the action lock release to the front of the trigger guard. The disassembly and maintenance of the M500 and the M870 are so similar that they are both currently covered on the same MRC. You can find further information on the Mossberg M500 shotgun in the manufacturer's owner's manual supplied with the weapon.

MK 87 MOD 1 LINE-THROWING RIFLE ADAPTER KIT

This kit replaces the Mk 87 Mod 0 kit that replaced the 45/70 line-throwing gun. Included in the kit are 6 projectiles, 1 launcher, 18 chemical light wands, and 1 recoil pad. The line-throwing assembly (launcher, projectile, and canister) is designed to be used with the M14 rifle and M64 grenade cartridge.

LAUNCHER

The launcher (fig. 2-32) is used to hold the projectile and trap propellant gases that propel the projectile. It consists of a cylindrical steel tube approximately 8.5 inches long and 2.75 inches in diameter at the launching end and 1 inch in diameter at the connecting end. When used with the M14 rifle, the launcher slides over the flash suppressor and is secured to the rifle by the latch and its wire loop that fits over the rifle's bayonet lug. The safety retaining pin, fastened to the launcher by a stainless steel lanyard, fits through the latch to lock the launcher to the rifle.

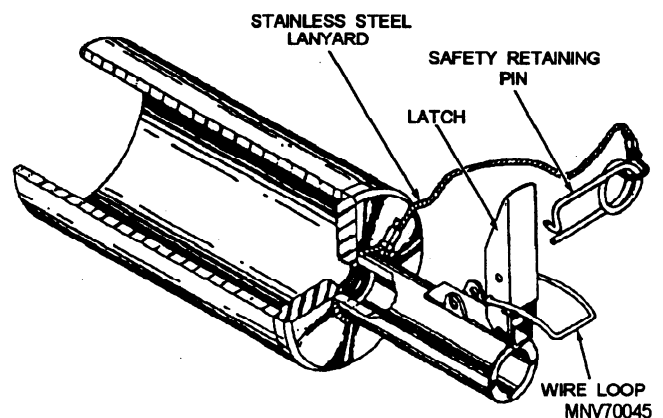


Figure 2-32.—Launcher.

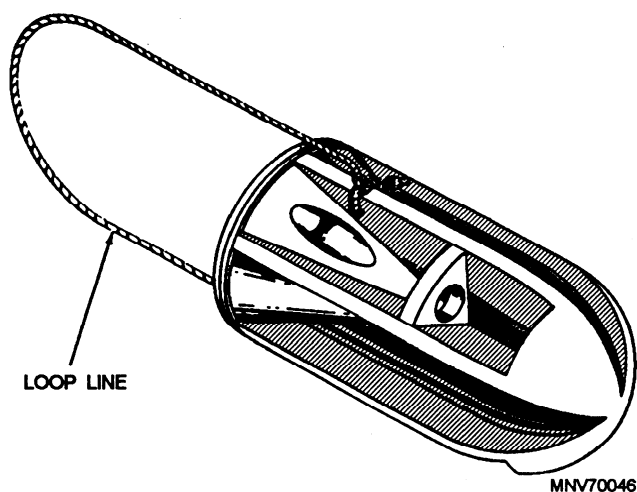


Figure 2-33.—Projectile.

PROJECTILE

The projectile (fig. 2-33) fits into the launcher. When the rifle grenade cartridge is fired, the projectile carries one end of the attached shot line to the desired destination. The projectile also houses the chemical light wands for night operation.

The reusable projectile is made of butyl rubber with a stainless steel disk assembled in the base end. The disk absorbs the impact of the propellant gases and the wadding of the rifle grenade cartridge. The hole and groove shown in figure 2-33 support the light wand. Three of these supports, located 120 degrees apart, are contained in each projectile. The loop line is used to connect the shot line to the projectile.

CHEMICAL LIGHT WAND

The chemical light wand (fig. 2-34) is used to illuminate the projectile during night operations. The light wand is installed by inserting it, tapered end first, into the hole and groove of the projectile.

The light wand is a two-component chemical illuminate system consisting of a yellow-green oxalate

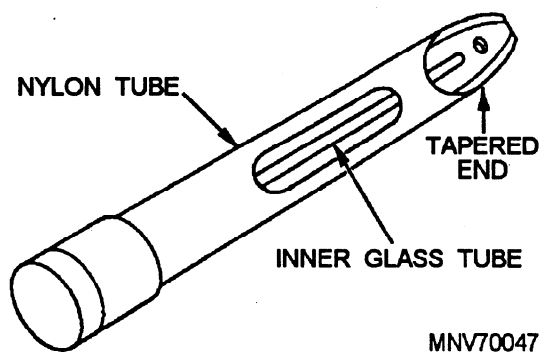


Figure 2-34.—Chemical light wand.

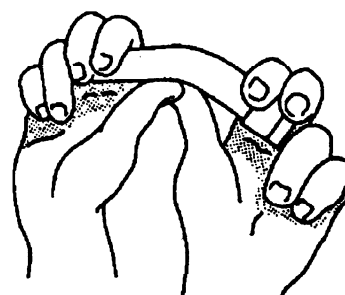


Figure 2-35.—Activating the chemical light wand.

solution inside a nylon tube. To activate the light, flex the nylon tube enough to break an inner glass tube, as shown in figure 2-35, and shake the wand well. Do not activate the light wand until you are ready to use it because once it is activated it must be used or disposed of. Do not dispose of the chemical light wand overboard as it may be mistaken for a man overboard exercise.

WARNING

If the nylon tube should puncture during activation, you may experience some mild discomfort from excessive skin or eye exposure to the oxalate solution. If this should happen, wash the exposed areas with soap and water as soon as possible.

Since the chemical light produces no flame or heat, its stowage is not restricted to ventilated and unconfined (topside) spaces. The active life of the chemical light is from 3 to 12 hours, depending on the ambient temperature. Its shelf life is approximately 2 years under normal conditions.

The canister (fig. 2-36) is made of polyethylene and houses the spool of shot line. The canister is attached to the rifle by the clamp shown in the figure.

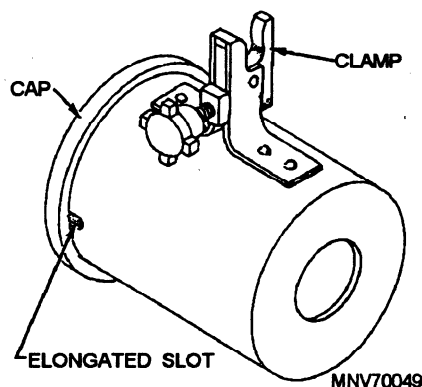


Figure 2-36.—Canister.

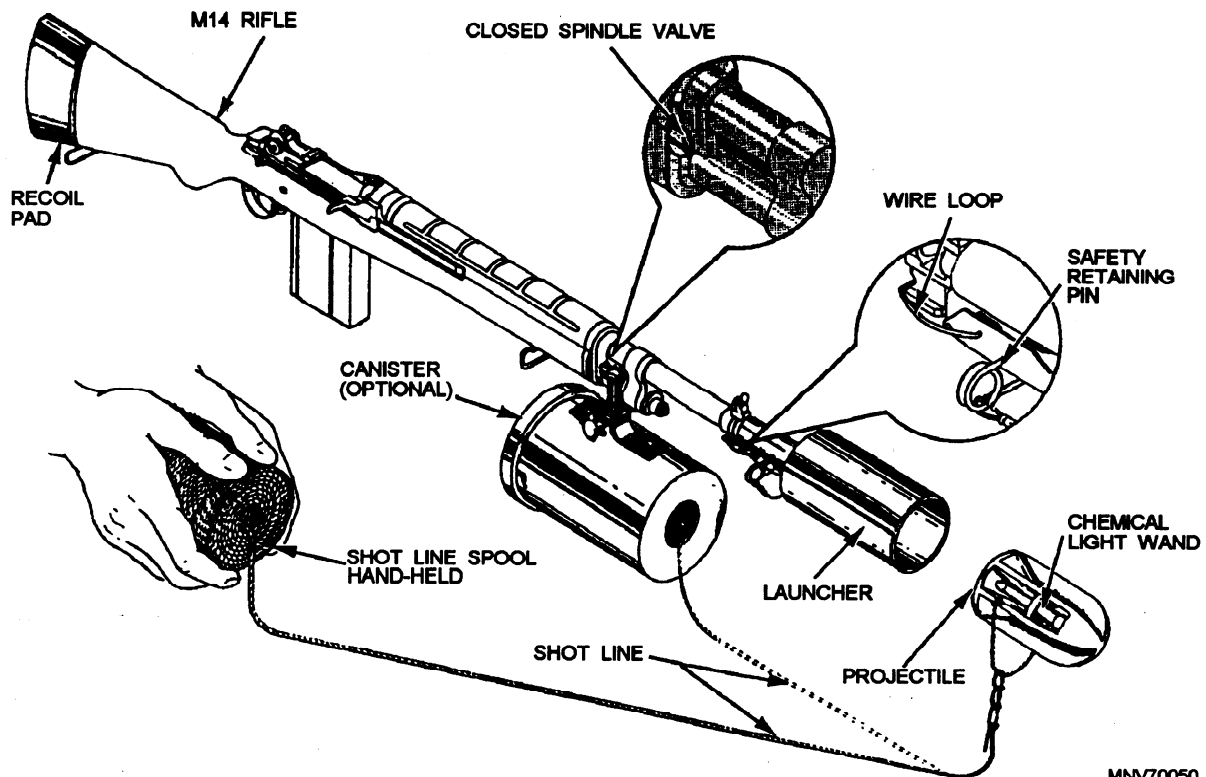


Figure 2-37.—Mk 87 Mod 1 kit on M14 rifle.

To install the shot line in the canister, remove the cap from the after end of the canister. Place the spool of shot line in the canister and feed the line from the center of the spool through the hole in front of the canister. Tie a knot in the bitter end of the shot line and slide it into the slot at the after end of the canister. Replace the canister cap. (The action of placing the knotted end of the shot line into the canister slot attaches the bitter end of the shot line to the canister.) Connect the line coming from the front end of the canister to the loop line on the projectile. Connect these lines (shot line and loop line) by a series of loosely tied half-hitch knots (three to five). Figure 2-37 shows the canister, shot line, and launcher mounted on the M14 rifle.

Note in figure 2-37 that the use of the canister is optional. With another person holding the shot line, the canister is not needed. The canister is part of the Mod 0 kit and should be retained for optional use with the Mod 1 kit.

RECOIL PAD

The slip-on recoil pad provided in this kit reduces the recoil on the operator when the projectile is launched. It is made of neoprene rubber that resists attacks by oil and other solvents and is designed for a

tight fit on the butt stock. Care is required during installation to prevent tearing. Once the pad is installed on the rifle used for line throwing, it should not be removed. The recoil pad is shown installed on the M14 rifle in figure 2-37.

GRENADE CARTRIDGES

Figure 2-38 shows the grenade cartridge M64 (7.62-mm) used with the M14 rifle for firing the line-throwing projectile. You can identify the cartridge by looking at, or by feeling, the five-pointed crimped end.



M64
(M14)

MNV70051

Figure 2-38.—M64 (M14) grenade cartridge.

You should load only one cartridge into the rifle at a time, and should not load it until you are at the rail, just before firing, with the rifle pointing outboard in a safe direction. Never use any cartridge other than one designated to fire a line-throwing projectile.

SHOT LINE

The nylon shot line comes in spools (fig. 2-39). The line is approximately 550 feet long and has a tensile strength of 125 pounds. It is wound around a wooden spindle in a way that prevents the line from fouling when the projectile is fired. The line is colored international orange and is treated with a water-repellent solution to make it buoyant enough to float on the surface for at least 24 hours.

PREPARATION FOR FIRING

On the M14 rifle, the spindle valve must be in the CLOSED (slot parallel to the barrel) position (See figure 2-37.) before the line-throwing projectile is fired.

NOTE

This position of the spindle valve is described as being in the OFF (horizontal) position in the first part of this chapter and in the TM9-1005-223-10.

FIRING

Before you fire the line-throwing projectile from the M14 rifle, elevate and aim the rifle over and across the designated target. Although the projectile is made of rubber, it has enough velocity to cause injury. Keep the rifle elevated until the projectile reaches its target to prevent line entanglement.

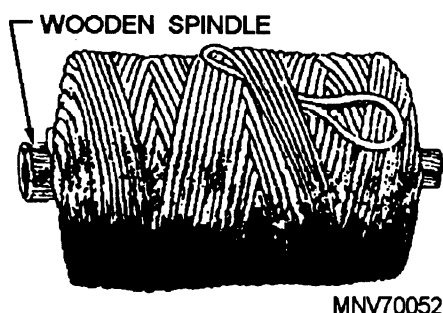


Figure 2-39.—Shot line.

Table 2-1.—Range Data

M14 RIFLE	
Degrees of Elevation	Range
60	80 yards
45	90 yards
30	85 yards
0	55 yards
NOTE: 0° (degrees) is when the rifle is parallel to the surface.	

If you experience a misfire or hangfire, wait 10 seconds before you eject the grenade cartridge. Report the malfunction according to OPNAVINST 5102.1.

The maximum reliable range of the line-throwing projectile is approximately 90 yards when fired from the M14 rifle. This range depends upon having a dry shot line. You can use a wet line if a dry line is not available, but it will reduce the range. Table 2-1 provides the approximate range data for firing from the M14 rifle.

MAINTENANCE

Maintenance and operation of the Mk 87 Mod 1 line-throwing rifle adapter kit is covered in NAVSEA SW350-A1-MMO-010. Kit maintenance is also covered by a 3-M Systems MRC.

MACHINE GUNS

The Navy currently uses the Browning .50-caliber machine gun and the 7.62-MM M60 machine gun. We discuss both of these weapons below.

THE .50-CALIBER BROWNING MACHINE GUN

Browning machine guns (abbreviated BMGs) are standard Army weapons used by the Navy. The .50-cal. BMG now used by the Navy and the Army is the M2.

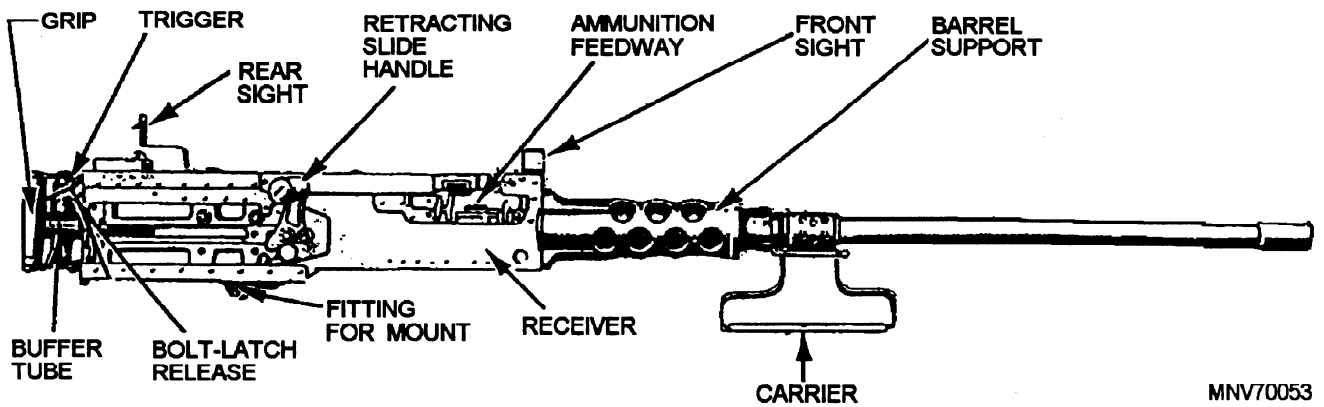


Figure 2-40.—.50-cal. HB Browning machine gun (M2).

The M2 BMG is only equipped with an air-cooled heavy barrel (HB) since the light air-cooled barrel is no longer in use.

For a time the .50-cal. BMG (fig. 2-40) was not used aboard surface ships, but it has since been installed on most types of ships and landing craft.

The .50-cal. BMG is a complex weapon, beyond the scope of this TRAMAN. Therefore, we will not discuss its mechanisms and principles of operation. In this chapter, we will simply describe the weapon and discuss how to operate it. For detailed information on the .50-cal. BMG, refer to the Army's FM 23-65.

The main characteristics of the .50-Cal. BMG (M2) are as follows:

Weight of the receiver group	56 lb
Weight of the barrel	26 lb (approx)
Total weight of the gun, complete, on its tripod mount, M3	126 lb (approx)
Maximum range (M2 ball)	7,400 yd
Maximum effective range	2,000 yd
Cyclic rate of fire	450-500 rpm
Muzzle velocity (M2 ball)	2,930 fps
Length of the gun overall	65 in. (approx)
Length of the barrel	45 in.

General Description

The .50-cal. HB M2 Browning machine gun is a belt-fed, recoil-operated, air-cooled machine gun. The gun is capable of both semiautomatic fire and automatic fire.

Ammunition can be fed from either the left or right side of the receiver (alternate feed) by having some of the gun's parts repositioned. However, under most circumstances, the ammunition is fed from the left side. A disintegrating metallic link belt is used in feeding. To prepare the gun for automatic firing, you must load the first round manually.

The force for recoil operation of the weapon is furnished by the expanding gases and is controlled by various springs, cams, and levers.

Air cooling of the weapon is permitted through maximum exposure to the air of the barrel and the receiver. Perforations in the barrel support allow air to circulate around the breech end of the barrel and help to cool the parts. The heavy barrel is used to retard early overheating.

Operating the .50-Cal. BMG

The safest and best way to operate a .50-cal. machine gun is to follow the correct procedures. By following set procedures, you prevent damage to the gun and possible injury to you or others in the area. The operating procedures of the .50-cal. BMG include prefire checks, loading and unloading, and postfire checks.

The primary prefire check requirement is the inspection of the weapon's headspace and timing. This is done with a head-space and timing gauge

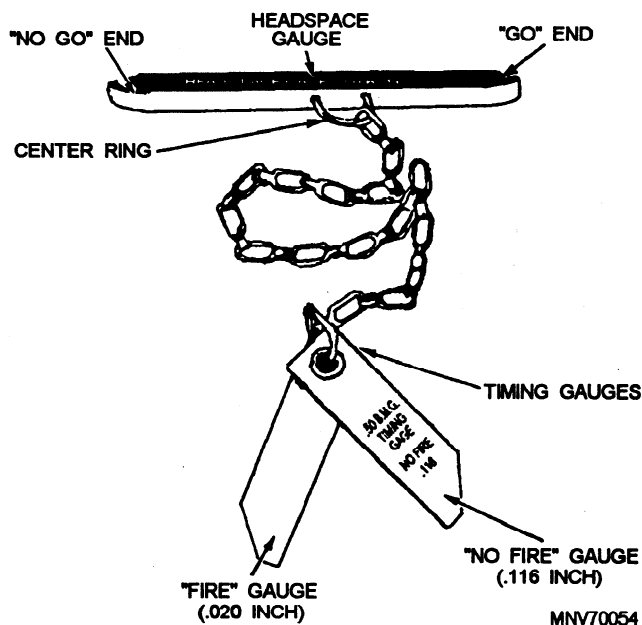


Figure 2-41.—Headspace and timing gauge.

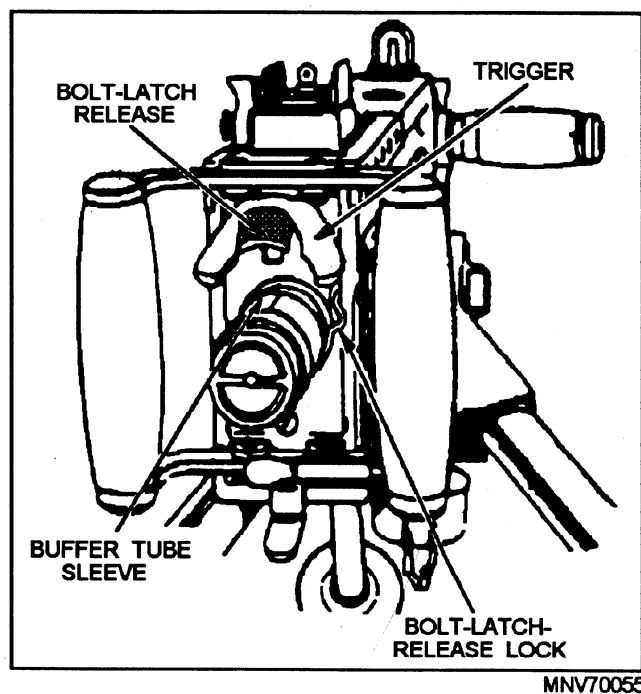


Figure 2-42.—Bolt-latch release free of the bolt-latch-release lock.

(fig. 2-41). Refer to the weapon's technical manual for instructions on how to use the gauge.

The operator must also select automatic or semiautomatic firing; automatic is the normal mode of operation. The mode of operation is determined by the position of the bolt-latch-release lock (fig. 2-42). For automatic firing, the bolt-latch release must be locked in the DEPRESSED position by the bolt-latch-release lock. To engage the bolt-latch-release lock, first depress the bolt-latch release. Then turn the bolt-latch-release lock counterclockwise until it hooks and retains the bolt-latch release in the DEPRESSED position.

To load the weapon, with the cover closed insert the double-loop end of the ammunition belt into the feedway until the first round is held by the belt-holding pawl (fig. 2-43). Then pull the retracting slide handle all the way to the rear and release it. With the bolt-latch-release lock positioned to engage the bolt-latch release, the bolt and retracting slide handle will move forward under pressure of the driving spring group, thus half-loading the gun. If the bolt-latch release is up and free of the bolt-latch-release lock, the bolt latch will hold the bolt to the rear. Push the retracting slide handle all the way forward (before releasing the bolt); then press down on the bolt-latch release to let the bolt go forward.

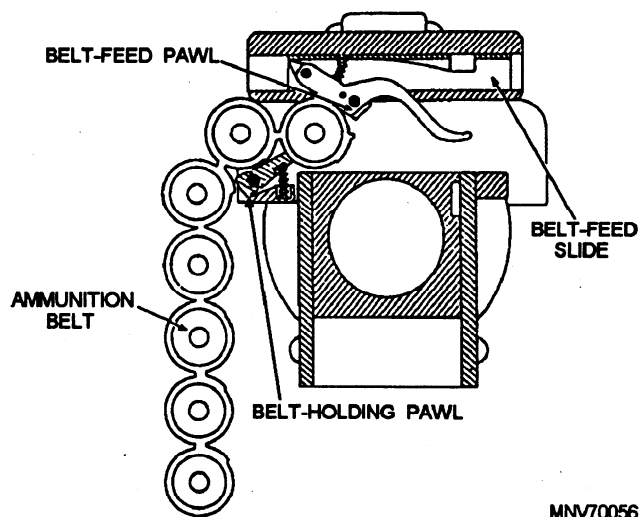


Figure 2-43.—First round held in feedway by belt-holding pawl.

To fully load the gun, follow the same procedure as for half-loading, except pull and release the bolt twice. When you have fully loaded the machine gun, fire it by depressing the butterfly trigger.

WARNING

Once fully loaded, the M2 .50-cal. machine gun maintains a round of ammunition in the chamber at all times. During sustained firing operations, the high temperature of the barrel may cause the round in the chamber to fire without the trigger being depressed. This is known as cook-off. Therefore, you should always keep the weapon pointed in a safe direction or cleared during breaks in firing. According to *Clearing of Live Ammunition From Guns*, NAVSEA SW300-BC-SAF-010, the M2 HB reaches cook-off temperature after a burst of 250 rounds or more.

While firing the M2, or any other belt-fed machine gun, you may experience an emergency condition known as *runaway firing*. In this situation, firing continues after the trigger has been released. If this happens to you, twist the ammunition belt at the feed slot. This will cause the weapon to jam and cease firing.

WARNING

In case of a runaway gun, keep the weapon laid on target and keep the cover closed. Again, DO NOT UNLATCH THE COVER!

To unload the gun, the unlock the bolt-latch release, turn the cover-latch release, and raise the cover. Lift the ammunition belt from the gun, pull the bolt to the rear, and examine the chamber and the T-slot to see that they hold no rounds. After you have finished this examination, allow the bolt to go forward, close and latch the cover, and press the trigger.

Gun maintenance

The importance of a thorough knowledge of how to care for, clean, and preserve the machine gun cannot be overemphasized. Proper care, cleaning, and preservation determine whether this gun will shoot accurately and function properly when needed. The bore and chamber must be kept in perfect condition to ensure accurate fire. Because of the close fit of working surfaces and the high speed at which the gun operates, it is important that the receiver and moving parts be kept clean, well-lubricated, and free of burrs, rust, dirt, or grease.

To be cared for properly, the machine gun must be cleaned according to a prescribed schedule. Such a schedule normally follows the 3-M Systems MRCs. TM 9-1005-213-10 also provides maintenance instructions for this gun. Under combat conditions, it may be necessary to clean the gun where it is mounted; however, when possible, the gun should be disassembled, cleaned, and oiled in a clean, dry location where it is least exposed to moisture, dirt, and so on. Be particularly careful to remove all sand or dirt; it will act as an abrasive on moving parts, causing excessive wear, sluggish operation, or malfunction. Do not oil parts excessively. Excessive oil solidifies and causes sluggish operation or complete failure,

Each gun should be cleaned as soon after firing as possible, and each time it is taken to the field and returned. Under combat conditions, the gun should be cleaned and lightly oiled daily. Under ideal conditions, where the gun is not used and is stored in a clean, dry place, it may only be necessary to inspect, clean, and lubricate the gun once a week. The threads on the gun barrels must be protected against being burred during handling and cleaning.

For more detailed information on the prescribed cleaning materials, lubricants, and rust preventives to be used in the .50-cal. BMG maintenance, refer to the Army's FM 23-65 and TM 9-1005-213-10.

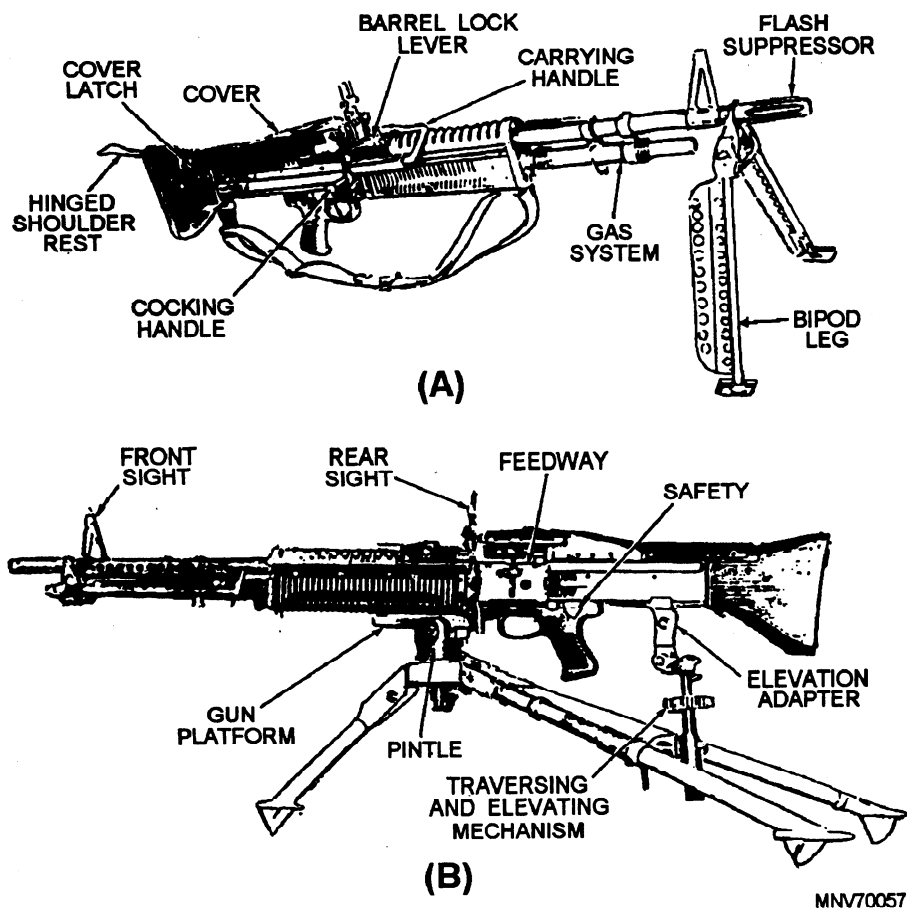


Figure 2-44.—M60 machine gun: (A) Bipod mounted; (B) Tripod mounted.

7.62-MM M60 MACHINE GUN

The M60 machine gun (fig. 2-44) is an air-cooled, belt-fed, gas-operated automatic weapon. The machine gun was originally developed for use by ground troops; however, it is used on many types and classes of ships, river patrol craft, and combat helicopters.

The essential features of the M60 are as follows:

Length	43.5 in. (110.5 cm)
Weight	23 lb (10.4 kg)
Maximum range	3,725 meters (4,075 yd)
Maximum effective range	1,100 meters (1,200 yd)
Ammunition	7,62-mm ball tracer, armor-piercing, incendiary, and dummy
Rates of fire: Sustained	100 rpm
Rapid	200 rpm
Cyclic	550 rpm

The M60 has a front sight permanently affixed to the barrel. The rear sight leaf is mounted on a spring-type dovetail base (fig. 2-45). It can be folded forward to the horizontal when the gun is to be moved. The range plate on the sight leaf is marked for each 100 meters, from 300 meters to the maximum effective

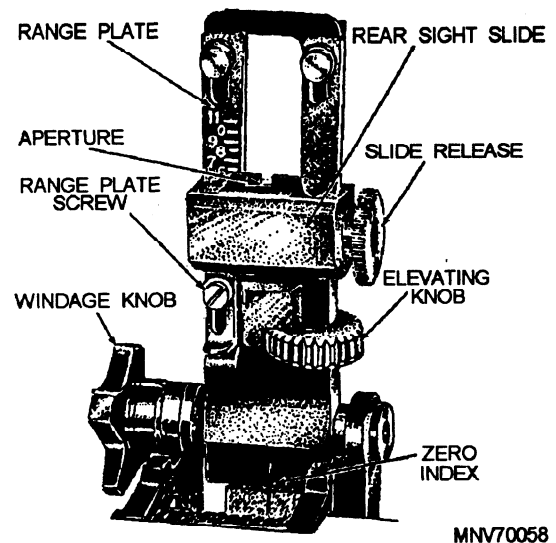


Figure 2-45.—M60 rear sight.

range of 1,100 meters. Range changes may be made by using either the slide release or the elevating knob. The slide release is used for making major changes in elevation. The elevating knob is used for fine adjustments, such as during zeroing. Four clicks on the elevating knob equal a 1-mil change of elevation. The sight is adjustable for windage 5 mils right and left of zero. The windage knob is located on the left side of the sight. One click on the windage knob equals a 1-mil change of deflection.

NOTE

1 mil equals 1 inch at 1,000 inches, 1 yard at 1,000 yards, 1 meter at 1,000 meters, and so on.

A safety lever located on the left side of the trigger housing has an S (SAFE) position and an F (FIRE) position. When the safety lever is in the SAFE position, the bolt cannot be pulled to the rear or released to go forward. The cocking lever, on the right side of the gun, is used to pull the bolt to the rear. It must be returned manually to its FORWARD position each time the bolt is manually pulled to the rear.

Operation

The machine gun is designed to function automatically as long as ammunition is fed into the gun and the trigger is held to the rear. Each time a round is

fired, the parts of the machine gun function in a certain sequence. Many of the actions occur simultaneously and are only separated for teaching purposes. The sequence of operation is known as the cycle of operation.

For ease of understanding, the complete cycle of operation is discussed in the following eight steps:

1. Feeding: A round is positioned in the feed tray groove.
2. Chambering: A round is stripped from the belt and placed in the chamber.
3. Locking: The bolt is locked inside the barrel socket.
4. Firing: The firing pin strikes and initiates the primer of the cartridge.
5. Unlocking: The bolt is unlocked from the barrel socket.
6. Extracting: The empty case is pulled from the chamber.
7. Ejecting: The empty cartridge case is thrown from the receiver.
8. Cocking: The sear engages the sear notch.

The cycle starts when a round is put into the feed tray groove and the trigger is pulled, releasing the sear from the sear notch (fig. 2-46). It stops when the trigger

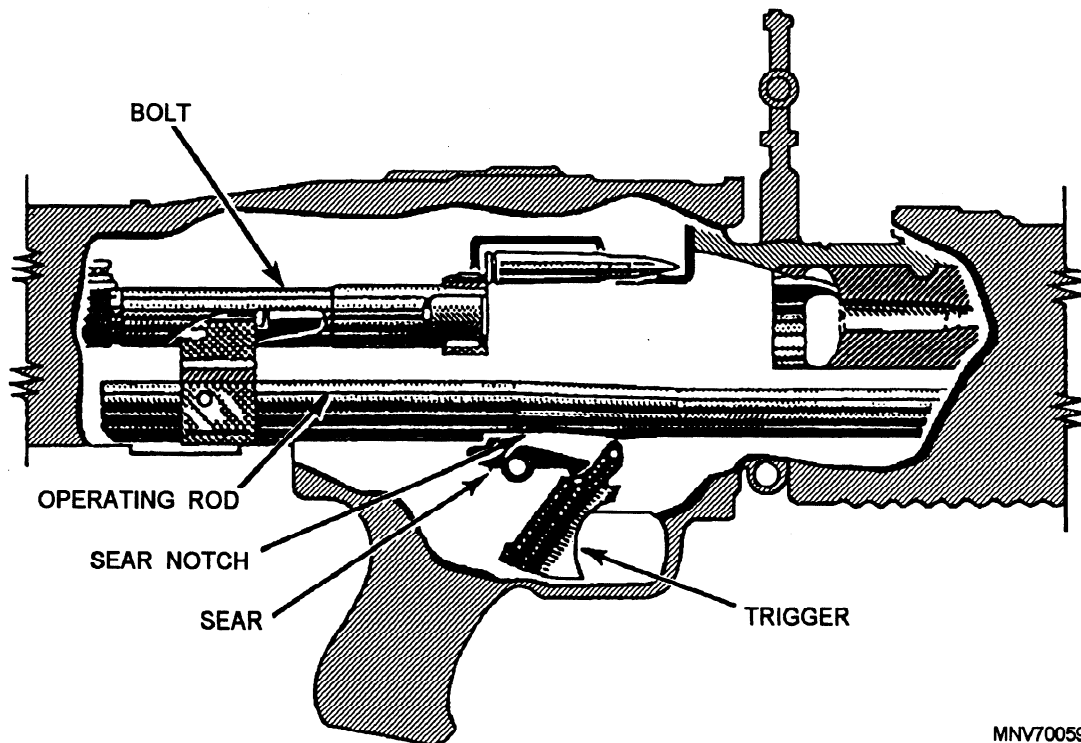


Figure 2-46.—The sear disengaging from the sear notch.

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is released and the sear again engages the sear notch in the operating rod. When the trigger is held to the rear, the rear of the sear is lowered and disengaged from the sear notch. This allows the operating rod and bolt to be driven forward by the expansion of the operating rod spring. Now that the gun is functioning, we can trace the steps of the cycle.

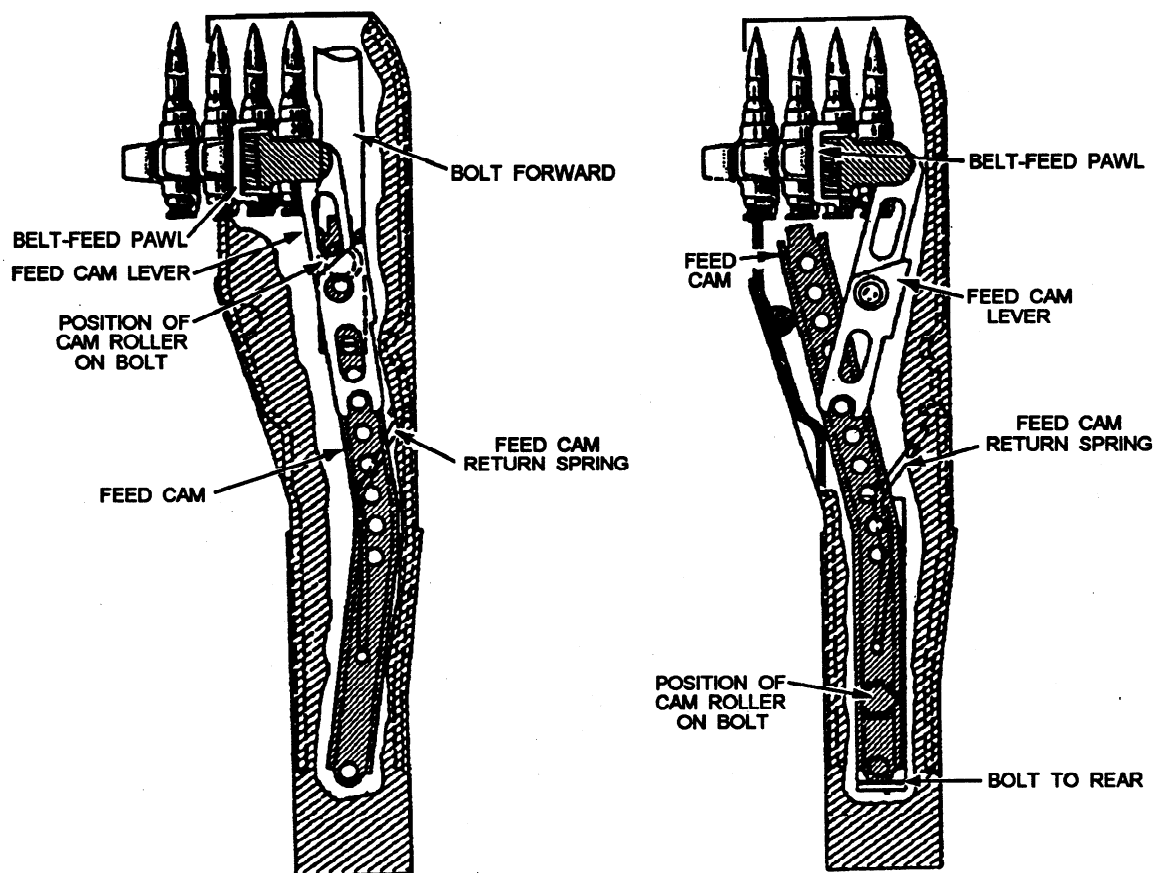
As the bolt begins its forward movement, the feed cam is forced to the right, causing the feed cam lever to pivot in the opposite direction and forcing the feed pawl over the next round in the belt, ready to place the round into the feed tray groove when the rearward action occurs again (figure 2-47). As the bolt moves to the rear after the firing, the cam roller in the top of the bolt forces the feed cam to the left. The feed cam lever is forced to pivot, moving the feed pawl to the right, placing a round into the feed tray groove.

As the bolt travels forward, the upper locking lug engages the rim of the cartridge. The pressure of the front and rear cartridge guides holds the round so that positive contact is made with the upper locking lug of the bolt. The front cartridge guide prevents the link's

forward motion as the round is stripped from the belt. The upper locking lug carries the round forward, and the chambering ramp causes the nose of the cartridge to be cammed downward into the chamber as shown in figure 2-48. When the round is fully seated in the chamber, the extractor snaps over the rim of the cartridge, and the ejector on the face of the bolt is depressed.

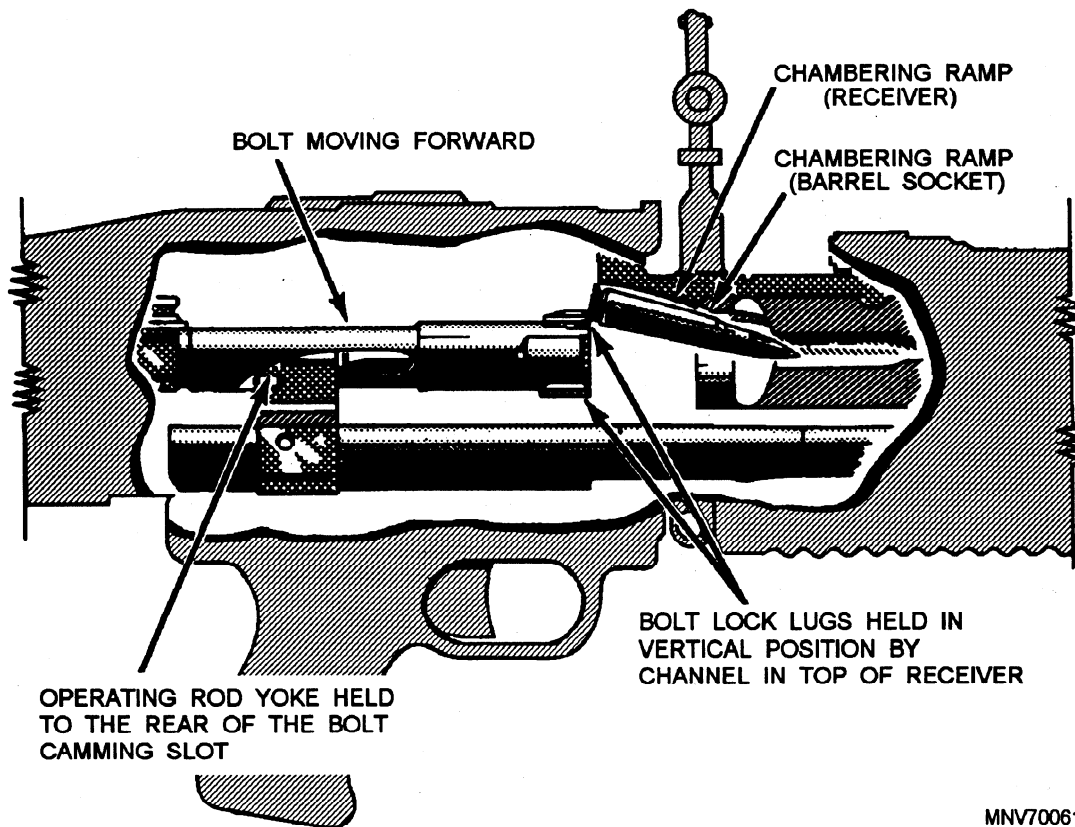
As the round is chambered, the bolt enters the barrel socket. The upper and lower locking lugs contact the bolt camming surfaces inside the barrel socket and start the rotation of the bolt clockwise. The action of the operating rod yoke against the bolt camming slot, as the operating rod continues forward, causes the bolt to complete its one-quarter turn clockwise rotation (fig. 2-49). Locking is then completed.

After the bolt reaches its fully forward and locked position, the operating rod continues to go forward, independently of the bolt, for a short distance. The yoke, engaged between the firing pin spools, carries the firing pin forward. The striker of the firing pin protrudes through the aperture in the face of the bolt,



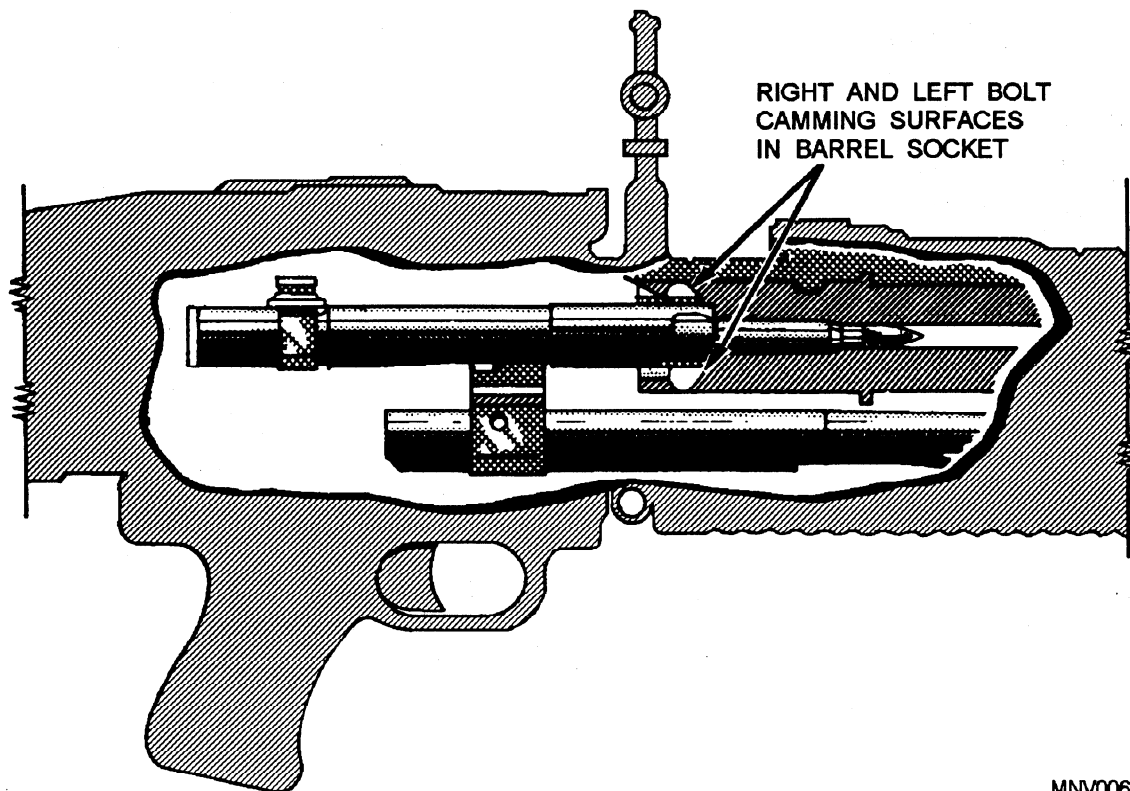
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Figure 2-47.—Feeding.



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Figure 2-48.—Chambering.



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Figure 2-49.—Weapon locked, ready to fire.

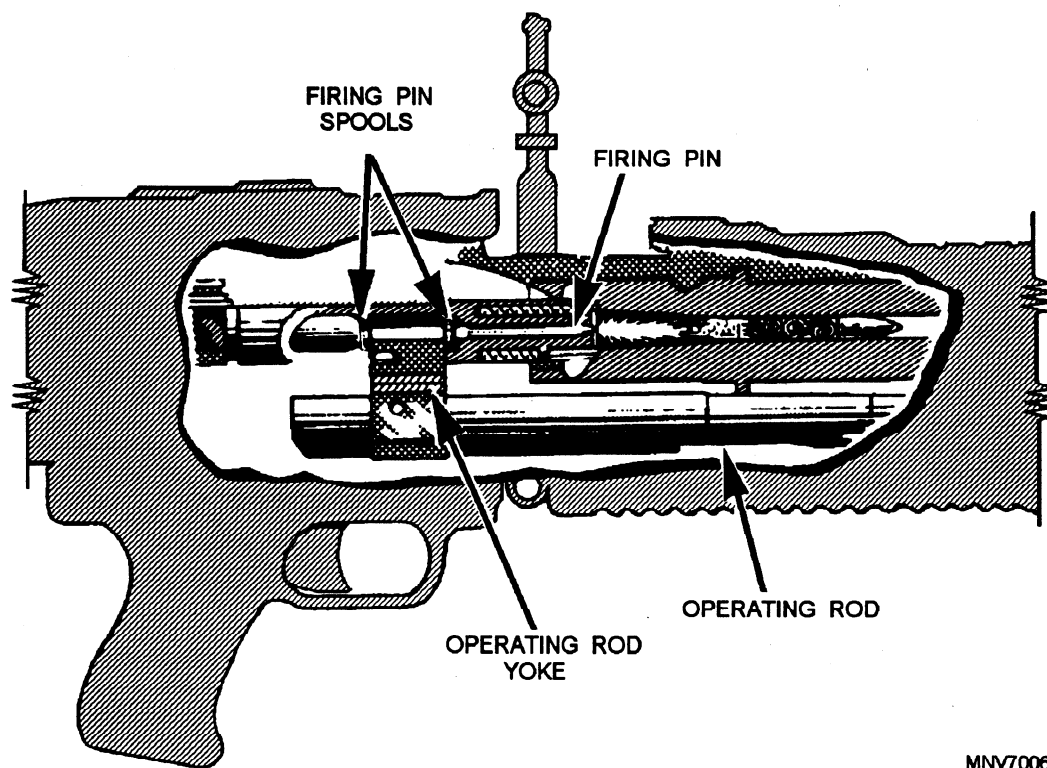


Figure 2-50.—Firing.

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strikes the primer of the cartridge, and ignites it. This action is depicted in figure 2-50.

After the cartridge is ignited and the projectile passes the gas port, part of the expanding gases enters the gas cylinder through the gas port. The rapidly expanding gases enter the hollow gas piston, as shown in figure 2-51, and force the piston to the rear. The operating rod, being in contact with the piston, is also pushed to the rear. As the operating rod continues to the rear, the operating rod yoke acts against the bolt camming slot to cause the bolt to begin its counterclockwise rotation. The upper and lower locking lugs of the bolt, contacting the bolt camming

surfaces inside the barrel socket, cause the bolt to complete its one-quarter turn rotation (counterclockwise) and unlock the bolt from the barrel socket. Unlocking begins as the yoke of the operating rod contacts the curve of the bolt camming slot and ends as the bolt clears the end of the barrel socket.

While unlocking is going on, extraction is beginning. The rotation of the bolt, in unlocking, loosens the cartridge case in the chamber. As the operating rod and bolt continue to the rear, the extractor (gripping the rim of the cartridge) pulls the cartridge case from the chamber. As the case is withdrawn from the chamber, the ejector spring expands. The ejector

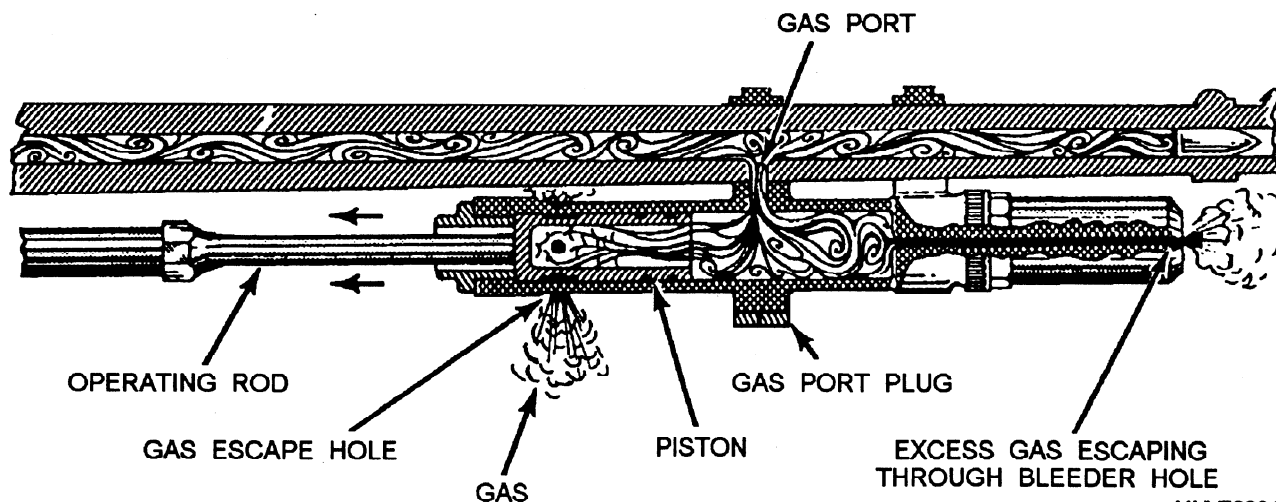


Figure 2-51.—Unlocking action of gases.

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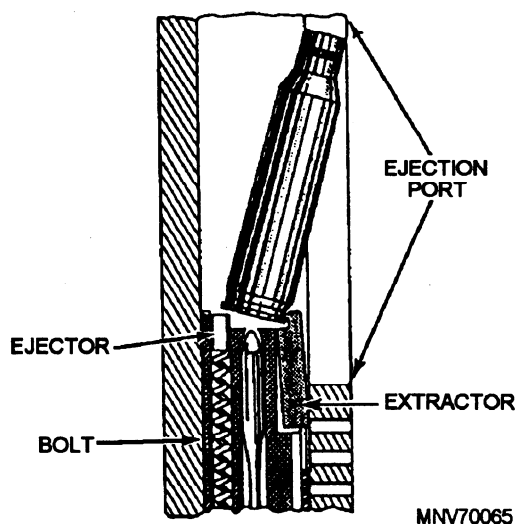


Figure 2-52.—Extraction and ejection.

presses on the base of the cartridge case, forcing the front of the spent case against the right side of the receiver, as shown in figure 2-52. As the bolt continues to the rear, the action of the ejector pushing against the base of the cartridge case and the extractor gripping the right side of the case causes the cartridge case to spin from the gun as the case reaches the ejection port. The empty link is forced out of the link ejection port as the rearward movement of the bolt causes the next round to be positioned in the feed plate groove.

As the expanding gases force the gas piston to the rear, the operating rod is initially moved independently of the bolt. The yoke of the operating rod acts against the rear firing pin spool, withdrawing the firing pin from the primer of the spent cartridge case. The action of the operating rod yoke continuing to the rear against the rear firing pin spool fully compresses the firing pin spring. As long as the trigger is held to the rear, the weapon will continue to complete the first seven steps of functioning automatically. When the trigger is released and the sear again engages the sear notch, the cycle of functioning is stopped and the weapon is cocked.

Disassembly

Two types of disassembly procedures may be performed on the M60 machine gun-general and detailed. General disassembly procedures involve removing most of the major groups and assemblies of the weapon, while the detailed procedures consist of removing the components of the major groups. Because detailed disassembly is so complex, we will discuss only the general disassembly procedures.

The M60 machine gun can be disassembled into eight major groups and assemblies without the use of force or special tools. These groups and assemblies are shown in figure 2-53. With the exception of the barrel

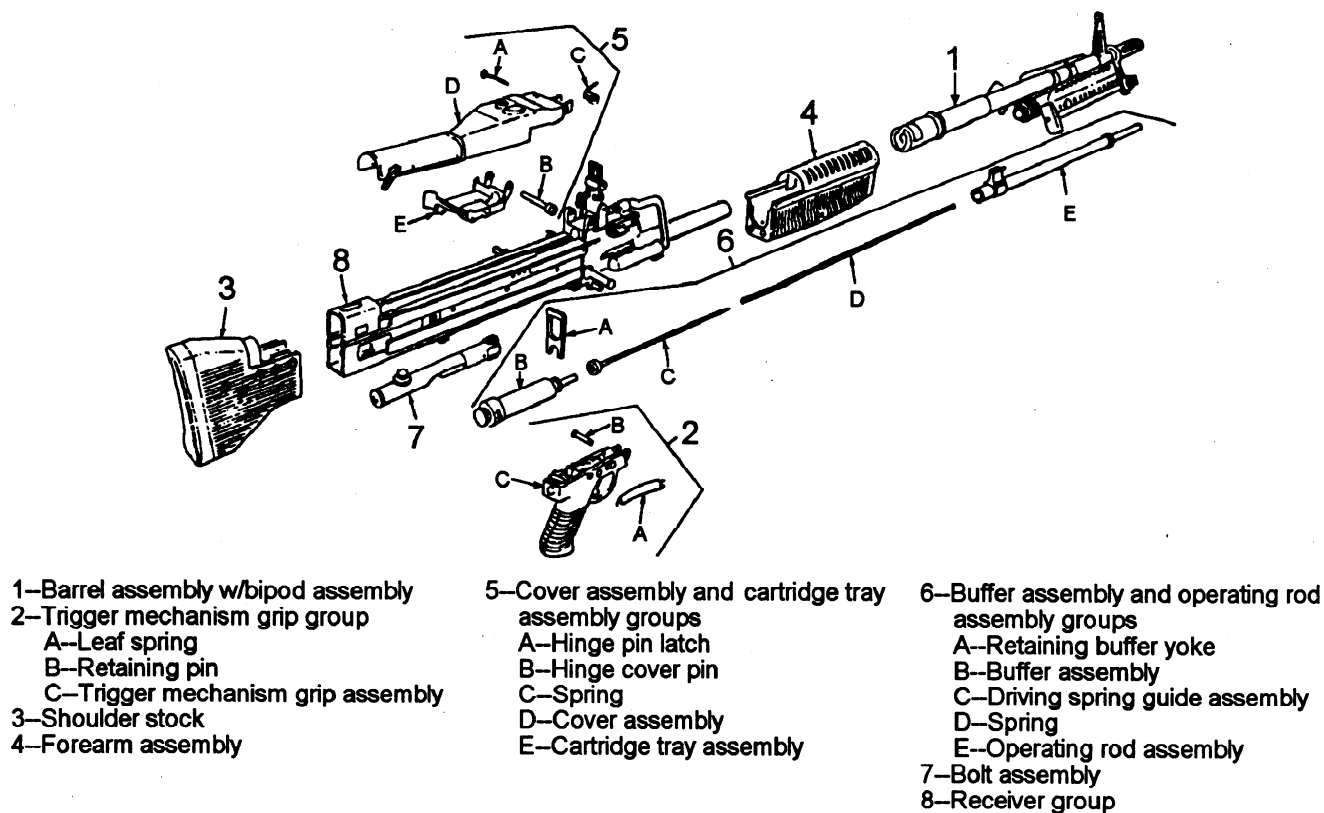


Figure 2-53.—Major groups and assemblies of the M60 machine gun.

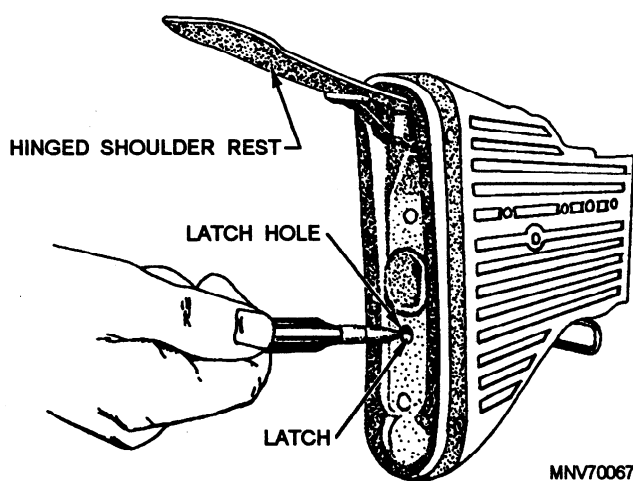


Figure 2-54.—Releasing the stock latch.

assembly, all disassembly can be done with a driftpin or a similar pointed object.

General disassembly begins with the bolt forward, the cover closed, and the safety on SAFE. Before you begin disassembling the weapon, inspect it thoroughly to make sure it is unloaded. As you disassemble the weapon, place the parts (in the order in which you remove them) on a clean, flat surface. This reduces the possibility of losing some of the parts and will aid you in reassembling the weapon. When you reassemble the weapon, replace the parts in reverse order.

REMOVING THE STOCK.—To remove the stock, raise the hinged shoulder rest and insert the nose of a driftpin into the latch hole as shown in figure 2-54. With the latch depressed, remove the stock by pulling it directly to the rear.

REMOVING THE BUFFER GROUP.—The buffer assembly group consists of the buffer yoke and the buffer. To disassemble the group, hold the palm of your hand against the exposed buffer and press the buffer lightly. Remove the buffer yoke from the top of the receiver as illustrated in figure 2-55. Withdraw the

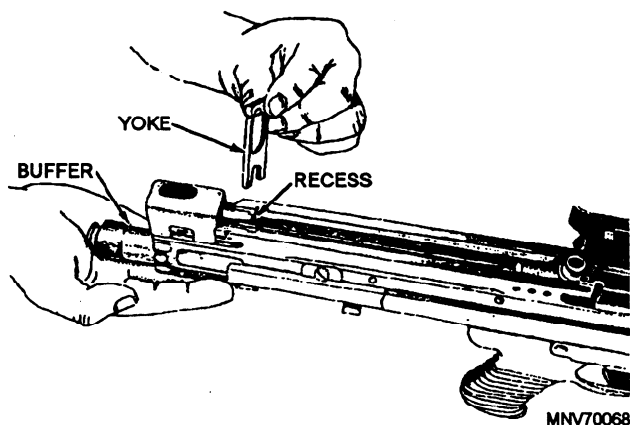


Figure 2-55.—Removing the buffer group.

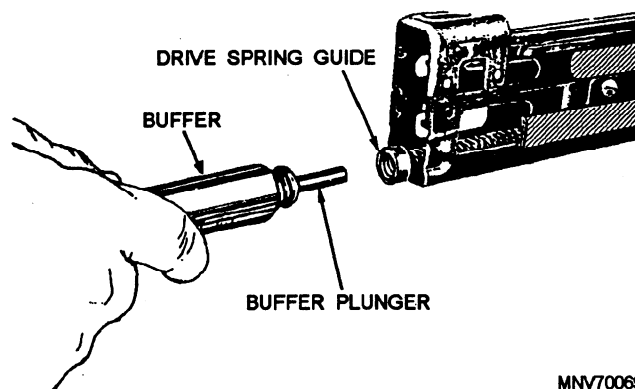


Figure 2-56.—Separating the buffer from the drive spring guide.

buffer slowly. Allow the drive spring to expand until the end of the drive spring guide is exposed at the rear of the receiver. Pull the buffer plunger from the drive spring guide (fig. 2-56).

REMOVING THE OPERATING GROUP.—The operating rod assembly group consists of the operating rod, the drive spring, the drive spring guide, and the bolt assembly. To remove the group, pull the drive spring guide and spring from the receiver and separate them. With the left hand, grasp the pistol grip and pull the cocking handle to the rear until the bolt is separated from the barrel socket. Continue to pull the operating rod and bolt to the rear by pulling the cam roller as shown in figure 2-57, view A.

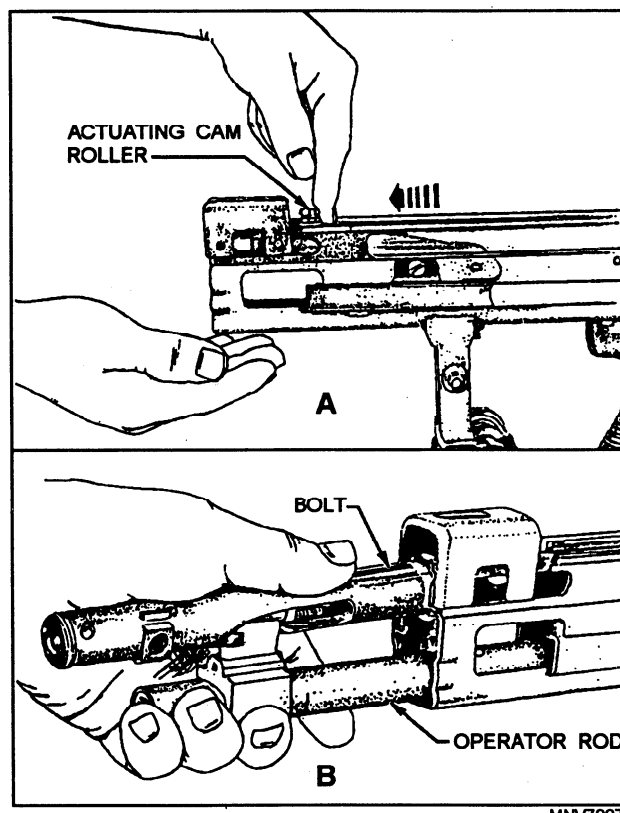


Figure 2-57.—Removing the operating group.

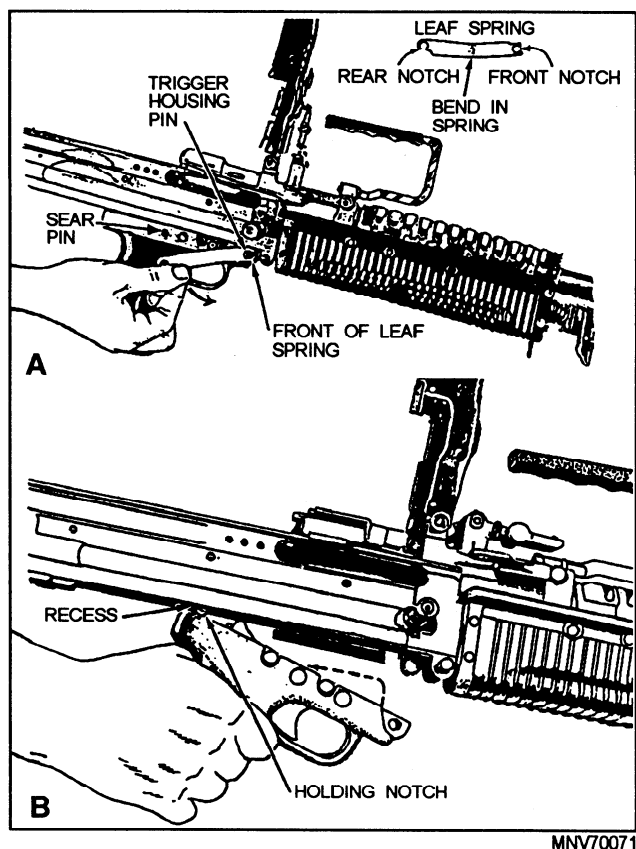


Figure 2-58.—Removing the trigger mechanism grip group.

When the operating rod and bolt are exposed approximately 4 inches to the rear of the receiver, grasp them securely to prevent the bolt from turning in, and remove them from the receiver (fig. 2-57, view B). Relax your grip and allow the bolt to rotate slowly. It is not necessary to separate the bolt from the operating rod.

REMOVING THE TRIGGER MECHANISM GROUP.—The trigger mechanism grip group consists of the trigger mechanism grip assembly (trigger housing, sear, sear pin, sear plunger, sear plunger spring, trigger pin, and trigger), trigger housing pin (interchangeable with the sear pin), and leaf spring. To remove the group, press in on the front of the leaf spring and rotate the front end down to clear it from the trigger housing pin as shown in figure 2-58, view A. Pull forward to disengage the rear notch from the sear pin. Remove the trigger housing pin by pushing it to the left. Slide the trigger housing slightly forward, rotate the front of the housing down, and remove it (fig. 2-58, view B).

REMOVING THE BARREL ASSEMBLY.—The barrel assembly consists of the barrel, the flash

suppressor, the front sight bipod assembly, and the gas cylinder. To remove the assembly, raise the barrel lock lever to the vertical position and remove the barrel assembly by pulling it to the front as shown in figure 2-59.

General disassembly to this point leaves the receiver group, the cover assembly and cartridge tray assembly groups, and the forearm intact, and is sufficient for general maintenance and cleaning of the M60 machine gun.

Assembly

The assembly procedures for the M60 machine gun are basically the reverse of the steps taken during disassembly. Starting with the receiver, attach each group and assembly in the following manner:

1. Make sure the barrel lock lever is in the vertical position, as shown in figure 2-59. Insert the rear of the barrel under the barrel cover and align the gas cylinder nut with its recess in the forearm assembly. Lower the barrel lock lever.
2. Engage the holding notch of the trigger housing in its recess in the bottom of the receiver (fig. 2-58, view B). Rotate the front of the trigger housing up and align the holes of the trigger housing with the mounting bracket on the receiver. Insert the trigger housing pin from the left. Engage the rear of the leaf spring with the sear pin (fig. 2-58, view A). Make sure the leaf spring is positioned so that the bent portion is pressed against the side of the trigger housing. Rotate the front of the leaf spring up and engage it with the trigger housing pin.
3. Insert the end of the operating rod into the receiver. Hold the rod with one hand. With the other hand, push forward on the rear of the bolt, causing the bolt to rotate until the locking lugs are in the vertical position. With the cam roller up, push the operating rod

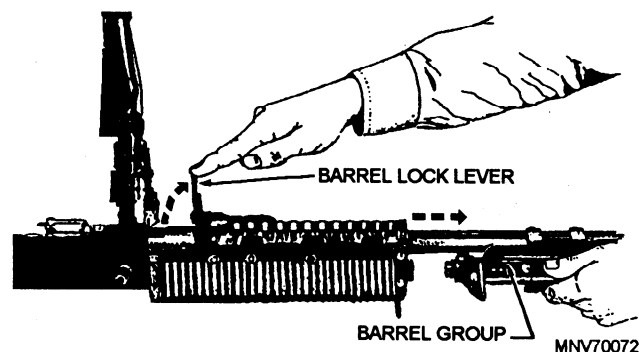


Figure 2-59.—Removing the barrel assembly.

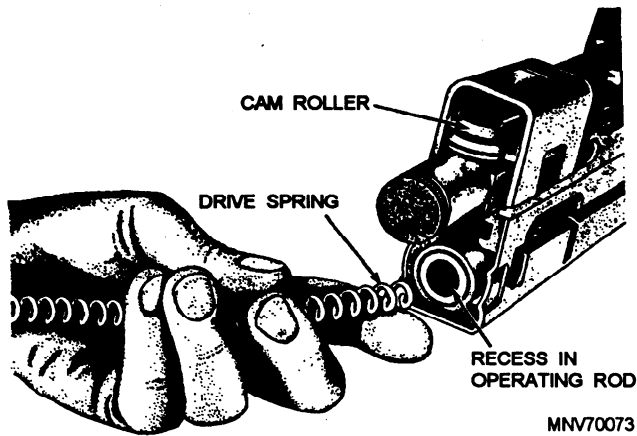


Figure 2-60.—Inserting the drive spring.

and the bolt into the receiver until the end of the operating rod is even with the rear of the receiver. Insert the drive spring guide into the drive spring; then insert the opposite end of the drive spring into the recess of the operating rod, as shown in figure 2-60. Pull the trigger and push in the drive spring until the head of the guide is approximately one inch from the receiver (fig. 2-56).

4. Insert the buffer plunger into the drive spring guide, as shown in figure 2-56. Push forward on the buffer until the operating rod and the bolt go fully forward. Push in on the buffer until the recesses on the buffer are aligned with the recesses in the receiver. Replace the buffer yoke from the top of the receiver, as shown in figure 2-55.

5. Align the guide rails of the stock with the guide rails on the receiver. Push forward until the stock is fully seated. You will hear a distinct click when the latch engages.

6. To check for correct assembly, pull the cocking handle to the rear and return it to its forward position. Close the cover and pull the trigger. The bolt should go forward.

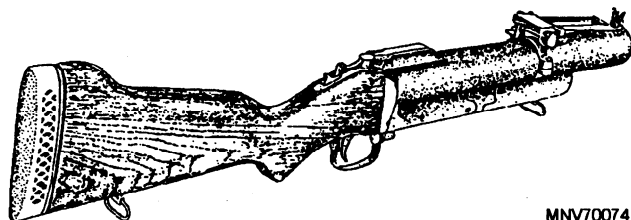


Figure 2-61.—M79 grenade launcher.

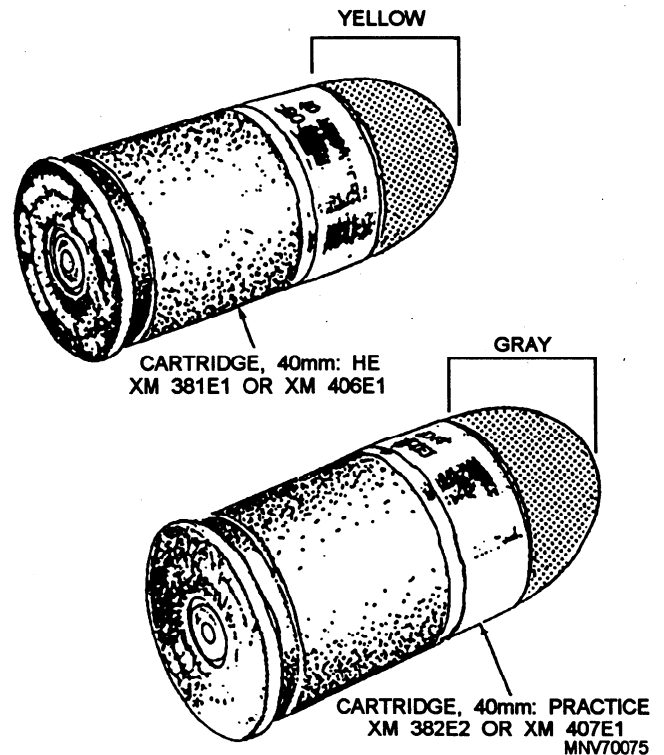


Figure 2-62.—Cartridges used with the M79 grenade launcher.

NOTE

The bolt must be in the rear (cocked) position before you can close the cover.

For further information on the M60 machine gun, refer to the Army's TM 9-1005-224-24 and TM 9-1005-24-10.

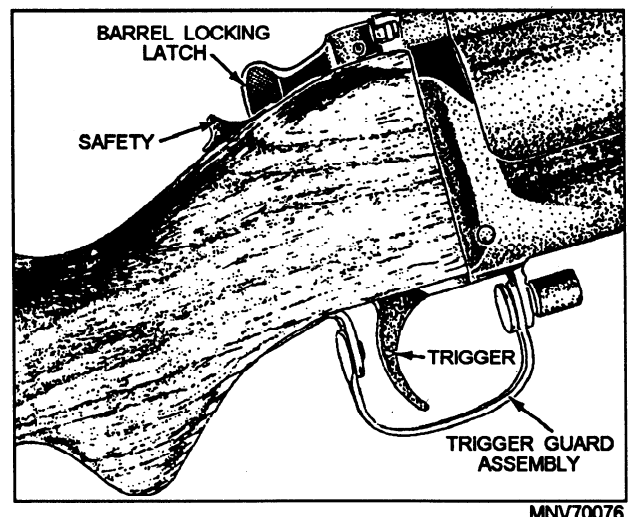


Figure 2-63.—Grenade launcher controls.

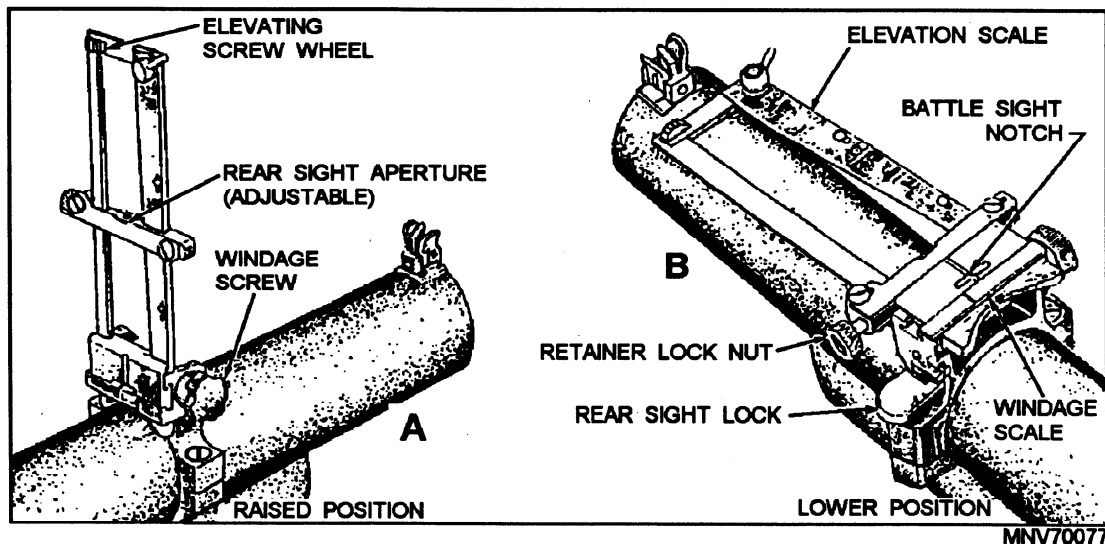


Figure 2-64.—Rearsight assembly.

GRENADE LAUNCHER

The M79 grenade launcher (fig. 2-61) is a break-open, single-shot weapon. It is breech loaded and chambered for a 40-mm metallic cartridge case with internal primer. Cartridges used with the M79 grenade launcher are shown in figure 2-62.

Controls of the M79 Grenade Launcher

The safety (fig. 2-63) located just behind the barrel locking latch. It is in the SAFE position when pulled all the way back and in the FIRING position when pushed all the way forward.

The barrel locking latch (fig. 2-63), when pushed all the way to the right, permits the breech end of the barrel to be swung up into the OPEN position. The grenade launcher cocks as it opens.

The trigger guard (fig. 2-63) is shown in lowered position. It can be released for setting to one side or the other by pushing back the cylindrical housing at the front. This makes it possible for a person wearing heavy gloves or mittens to fire the grenade launcher. The sights are shown in figure 2-64.

Operating the M79 Grenade Launcher

Use the following procedures to load and fire the M79 grenade launcher.

PREPARATION FOR FIRING.—Check the bore to be sure it is free of foreign matter or obstructions. Check all ammunition to be sure you are

using the proper type and grade. Check the launcher to be sure it is properly cleaned. Also inspect it for malfunctions and other defects.

LOADING.—Point the muzzle of the launcher at the ground and clear the area of all personnel.

Move the barrel locking latch all the way to the right and break open the breech. If the safety is not already on SAFE, this procedure will cause it to move to SAFE, provided that the barrel locking latch is moved to its full limit of travel.

Insert the projectile portion of the ammunition into the chamber opening (fig. 2-65) and push the complete round forward into the chamber until the extractor contacts the rim of the cartridge case. Close the breech.

FIRING.—Before you fire the launcher, you must be in either a standing or prone position. In the standing position, place the butt against your shoulder. In the

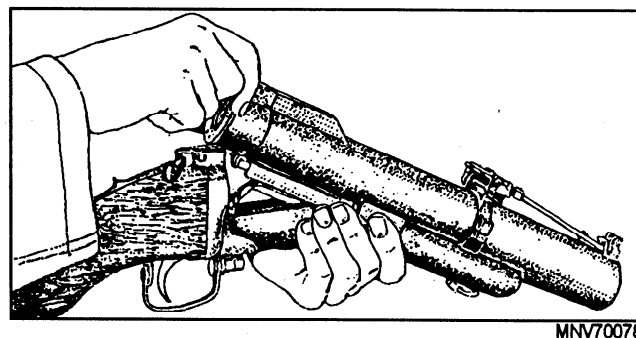


Figure 2-65.—Loading the M79 grenade launcher.

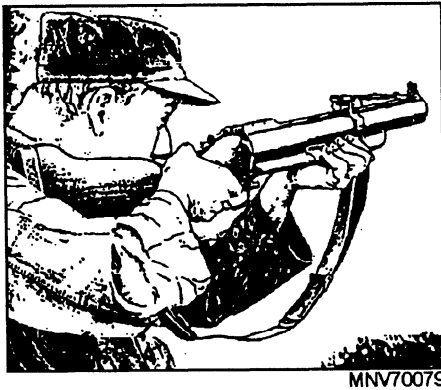


Figure 2-66.—Firing the M79 from the standing position.



Figure 2-67.—Firing the M79 from the prone position.

prone position, place the butt against the ground. (See figures 2-66 and 2-67.)

To engage targets at ranges from 50 to 80 meters (165 to 265 feet), place the rear sight frame in the lowered (called the battle sight) position (fig. 2-64). To engage targets at longer ranges, place the rear sight

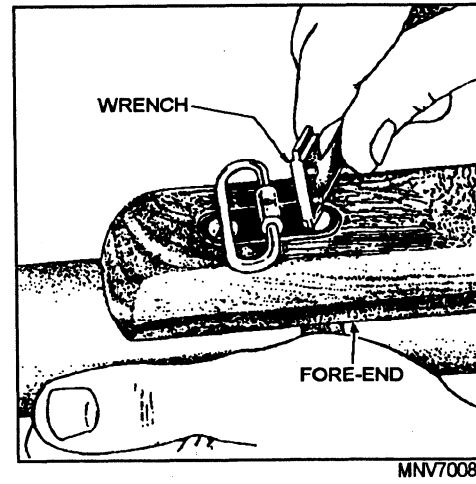


Figure 2-68.—Removing the fore-end assembly retainer screw.

frame in the upright position (fig. 2-64) and set the sight aperture bar at the approximate target range of the scale. TM 9-1010-205-10 provides detailed instruction on use of the launcher's sights.

When you fire grenades at targets within battle sight ranges (50 to 80 meters or 165 to 265 feet), you must be in a protected position. Do NOT fire upon targets that are within 80 meters (265 feet) of friendly troops.

Field-stripping the M79 Grenade Launcher

Field-stripping the M79 grenade launcher consists of separating the fore-end assembly from the barrel and receiver group and separating the stock from the receiver group.

To remove the fore-end assembly, first use the wrench assembly shown in figure 2-68 to remove the machine screw shown in the same figure. Then pull the front end of the fore-end assembly away from the barrel, as shown in figure 2-69, until the lug on the rear sight

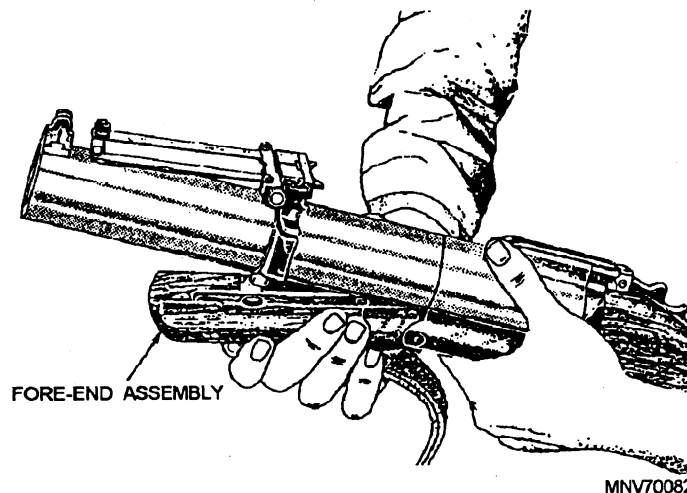


Figure 2-69.—Removing the fore-end assembly.

base is clear of the hole in the upper surface of the fore-end bracket. Keeping the lug clear of the hole, pull forward on the fore-end assembly until it is free of the receiver assembly.

To remove the barrel group from the receiver group, fast actuate the barrel locking latch and open the breech. Then, holding the stock and receiver stationary, move the barrel rearward in the receiver until it is disengaged from the fulcrum pin as shown in figure 2-70. Separate the barrel from the receiver group.

To separate the stock from the receiver group, use a combination wrench assembly, as shown in figure 2-71, and remove the pin-headed machine screw that secures the stock to the receiver group.

For further information on the M79 grenade launcher, refer to U.S. Army TM 9-1010-205-24 and TM 9-1010-205-10.

SPECIAL PRECAUTIONS FOR SMALL ARMS

Semiautomatic pistols in the hands of inexperienced or careless persons are largely responsible for the saying, It's always the unloaded gun that kills. Many accidental deaths and injuries are due to the mistaken belief that removing the magazine from a pistol (or other magazine-fed weapon) is all that is necessary to unload it. Simply removing the magazine DOES NOT unload the weapon. To completely unload a pistol or other magazine-fed weapon and render it safe to handle, you must not only remove or empty the magazine, but also make absolutely certain that the chamber is empty. The only way you can do this is to pull back the slide or bolt and inspect the chamber either visually or, if it is dark, by feel. You should do this after you have removed the magazine and with the muzzle

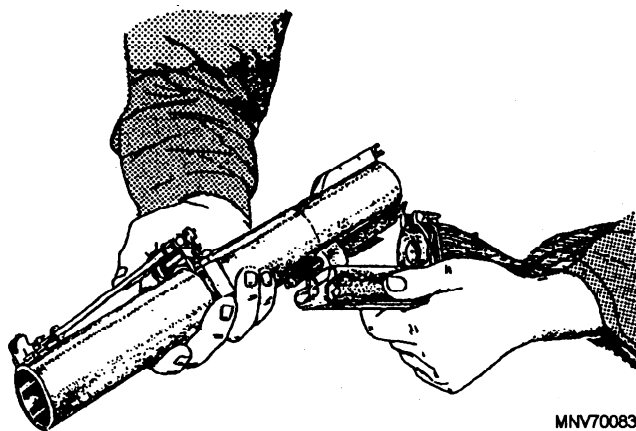


Figure 2-70.—Removing the barrel group.

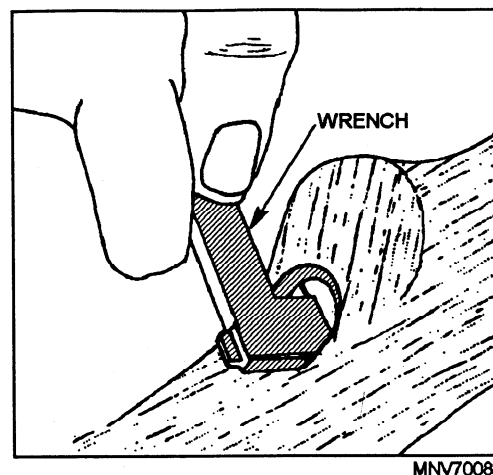


Figure 2-71.—Removing receiver group attaching screw.

pointed upward. Of course, if the chamber is loaded, the round will be extracted and ejected when you operate the slide. I didn't know it was loaded is never an excuse for the accidental discharge of a weapon. All weapons must be considered loaded when the slide or bolt is forward or the magazine is in the weapon. A weapon is safe only when the slide or bolt is locked in the open position, the magazine is out of the weapon, and the chamber is visibly empty.

When you handle revolvers, a simple visual inspection is sufficient to determine if any chambers in the cylinder are loaded.

Keep the hammer fully down when a pistol or revolver is not loaded. When the pistol is cocked, keep the safety lock in the ON (SAFE) position until you are ready to fire.

Let us review briefly some of the safety precautions that apply to the handling of all small arms:

- Never point a weapon at anyone or anything you are not ready to destroy.
- Unless you plan to use the weapon immediately, never carry it with a round in the chamber.
- Unless you are about to fire a weapon, always keep its safety in the SAFE position. Always keep your finger away from the trigger. When the safety is moved from the SAFE to the FIRE position, many small arms will fire if the trigger is pressed as the safety is released.
- Consider a gun loaded until you have opened the chamber and verified that it is empty. It is not enough to wait afterward, I didn't know it was loaded. The empty weapon is the dangerous one.

- Before you fire any weapon, be sure there are no obstructions in the bore.

- Before you fire any weapon, be sure the ammunition you are using is the right ammunition. For example, M14 ammunition cannot be used in the M16 rifle. Nor should illumination signals be used in shotguns, even though they look much like shotgun shells.

- Before firing, be sure there is no grease or oil on the ammunition or in the bore or chamber. Although lead bullets may be lightly waxed or greased, there must never be any lubricant on the cartridge case.

- Keep ammunition dry and cool. Keep it out of the direct rays of the sun. Keep ammunition clean, but do not polish it or use abrasives on it. Do not attempt to use dented cartridges, cartridges with loose bullets, or cartridges eaten away by corrosion. Be particularly careful with tracer ammunition, which can ignite spontaneously if it gets damp.

- Misfires and hangfires can occur with small arms ammunition as well as with other types. On some weapons, like the automatic pistol, you can recock and attempt to fire again without opening the breech. If, after a couple of tries, this proves unsuccessful, or if you cannot recock the weapon without opening the bolt, wait at least 10 seconds, then open the bolt and eject the defective round. Dispose of defective small arms ammunition according to current regulations.

- A misfire with blank cartridges may leave unburned powder deposited in the bore; always check the bore after any misfire and clean it if necessary.

- If you experience a light recoil or report, clear the weapon and check the bore for an obstruction. This may indicate a partial burning of the propellant that may not have been sufficient to force the bullet clear of the muzzle.

WARNING

Never try to dislodge a bullet from the barrel by firing another bullet.

SMALL ARMS MAINTENANCE

The cleaning, preservation, and care given to small arms are determining factors in their operation and shooting accuracy. You have undoubtedly heard that an ounce of prevention is worth a pound of cure. This can aptly be applied to the maintenance of all ordnance weapons and equipment. To properly maintain these weapons, you must use a system of preventive maintenance. The preventive maintenance procedures for Navy small arms are set forth in the appropriate 3-M Systems MRCs.

Preventive maintenance is the systematic care, inspection, and servicing of material to maintain it in a serviceable condition, to prevent breakdowns, and to assure operational readiness. To maintain your small arms in a state of readiness, you must ensure that they are serviced (including lubrication) each time they are used and periodically when in stowage.

Inspections of each weapon are an important part of preventive maintenance. Inspections to see if items are in good condition, correctly assembled, secure, not worn, and adequately lubricated, apply to most items in preventive maintenance procedures.

STOWAGE AND ISSUE OF SMALL ARMS

Small arms should always be stowed in an authorized and secure stowage to prevent pilferage. A strict accountability must be maintained at all times. This includes access control, key custody, and storage requirements.

Since all small arms are considered equipage, a signature of subcustody is required before they are issued from their normal place of stowage. Any type of signed custody record may be used as long as it bears the receiving individual's signature. Your armorer has a list of personnel who are qualified to be issued weapons. Anyone who is not on that list will not be able to draw a weapon from the armory. Out-of-the-ordinary requests for weapons are usually prearranged and authorized. Questionable requests for weapons are referred to the chief, the division officer, or the command duty officer.